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THE HEALTH CARE WORKFORCE IN EIGHT STATES: EDUCATION, PRACTICE AND POLICY

Spring 2002

INTERSTATE COMPARISONS

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The Health Care Workforce in Eight States: Education, Practice and Policy

PROJECT DESCRIPTION

Historically, both federal and state governments have had a role in developing policy to shape the health care workforce. The need for government involvement in this area persists as the private market typically fails to distribute the health workforce to medically underserved and uninsured areas, provide adequate information and analysis on the nature of the workforce, improve the racial and ethnic cultural diversity and cultural competence of the workforce, promote adequate dental health of children, and assess the quality of education and practice.

It is widely agreed that the greatest opportunities for influencing the various environments affecting the health workforce lie within state governments. States are the key actors in shaping these environments, as they are responsible for:

- financing and governing health professions education;
- licensing and regulating health professions practice and private health insurance;
- purchasing services and paying providers under the Medicaid program; and
- designing a variety of subsidy and regulatory programs providing incentives for health professionals to choose certain specialties and practice locations.

Key decision-makers in workforce policy within states and the federal government are eager to learn from each other. This initiative to compile in-depth assessments of the health workforce in 8 states is an important means of insuring that states and the federal government are able to effectively share information on various state workforce data, issues, influences and policies.

Products of this study include individual health workforce assessments for each of the eight states and a single assessment that compares various data and influences across the eight states. In general, each state assessment provides the following:

- 1) A summary of health workforce data, available resources and a description of the extent the state invests in collecting workforce data. [Part of this information has been provided by the Bureau of Health Professions];
- 2) A description of various issues and influences affecting the health workforce, including the state's legislative and regulatory history and its current programs, financing and policies affecting health professions education, service placement and reimbursement, planning and monitoring, and licensure/regulation;
- 3) An assessment of the state's internal capacity and existing strategies for addressing the above workforce issues and influences; and
- 4) An analysis of the policy implications of the state's current workforce data, issues, capacity and strategies.

The development of the project's data assimilation strategy, content and structure was guided by an expert advisory panel. Members of the advisory panel included both experts in state workforce policy (i.e., workforce planners, researchers and educators) and, more broadly, influential state health policymakers (i.e., state legislative staff, health department officials). The advisory panel has helped to ensure the workforce assessments have an appropriate content and effective format for dissemination and use by both state policymakers and workforce experts/officials.

STUDY METHODOLOGY

Study Purpose and Audience

Key decision-makers in workforce policy within states and the federal government are eager to learn from each other. Because states increasingly are being looked to by the federal government and others as proving grounds for successful health care reform initiatives, new and dynamic mechanisms for sharing innovative and effective state workforce strategies between states and with the federal government must be implemented in a more frequent and far reaching manner. This initiative to compile comprehensive capacity assessments of the health workforce in 8 states is an important means of insuring that states and the federal government are able to effectively share information on various state workforce data, issues and influences.

Each state workforce assessment report is not intended to be voluminous; rather, information is presented in a concise, easy-to-read format that is clearly applicable and easily digestible by busy state policymakers as well as by workforce planners, researchers, educators and regulators.

Selection of States

NCSL, with input from HRSA staff, developed a methodology for identifying and selecting 8 states to assess their health workforce capacity. The methodology included, but was not limited to, using the following criteria:

- a. States with limited as well as substantial involvement in one or more of the following areas: statewide health workforce planning, monitoring, policymaking and research;
- b. States with presence of unique or especially challenging health workforce concerns or issues requiring policy attention;
- c. States with little involvement in assessing health workforce capacity despite the presence of unique or especially challenging health workforce concerns or issues requiring policy attention;
- d. Distribution of states across Department of Health and Human Services regions;
- e. States with Bureau of Health Professions (BHP) - supported centers for health workforce research and distribution studies;
- f. States with primarily urban and primarily rural health workforce requirements; and
- g. States in attendance at BHP workforce planning workshops or states that generally have interest in workforce modeling.

Collection of Data

NCSL used various means of collecting information for this study. Methods exercised included:

- a. Phone and mail interviews with state higher education, professions regulation, and recruitment/retention program officials;
- b. Custom data tabulations by national professional trade associations and others (i.e., Quality Resource Systems, Inc.; Johns Hopkins University School of Public Health) with access to national data bases;
- c. Tabulations of data from the most recent edition of federal and state government databases (e.g., National Health Service Corps field strength);
- d. Site visit interviews with various officials in the ten profile states;
- e. Personal phone conversations with other various state and federal government officials;
- f. Most recently available secondary data sources from printed and online reports, journal articles, etc.; and
- g. Comments and guidance from members of the study's expert advisory panel.

INTRODUCTION

The supply and distribution of the major health professions in most states remains subject to debate and controversy. General shortages of most health professions in rural and inner city communities continues unabated. The lack of primary care physicians and dentists to serve our nation's Medicaid and low-income populations is troublesome. Although certain non-physician health professionals—which are growing dramatically in number—are being widely touted as a practical solution to the shortage of primary care in underserved areas and elsewhere (at least in the short term), state practice acts and other factors may be limiting their effectiveness.

The need for government involvement in this area persists as the private market typically fails to distribute the health workforce to medically underserved and uninsured areas, provide adequate information and analysis on the nature of the workforce, improve the racial and ethnic cultural diversity and cultural competence of the workforce, promote adequate dental health of children, and assess the quality of education and practice.

It is widely agreed that the greatest opportunities for influencing the various environments affecting the health workforce lie within state governments. States are the key actors in shaping these environments, as they are responsible for:

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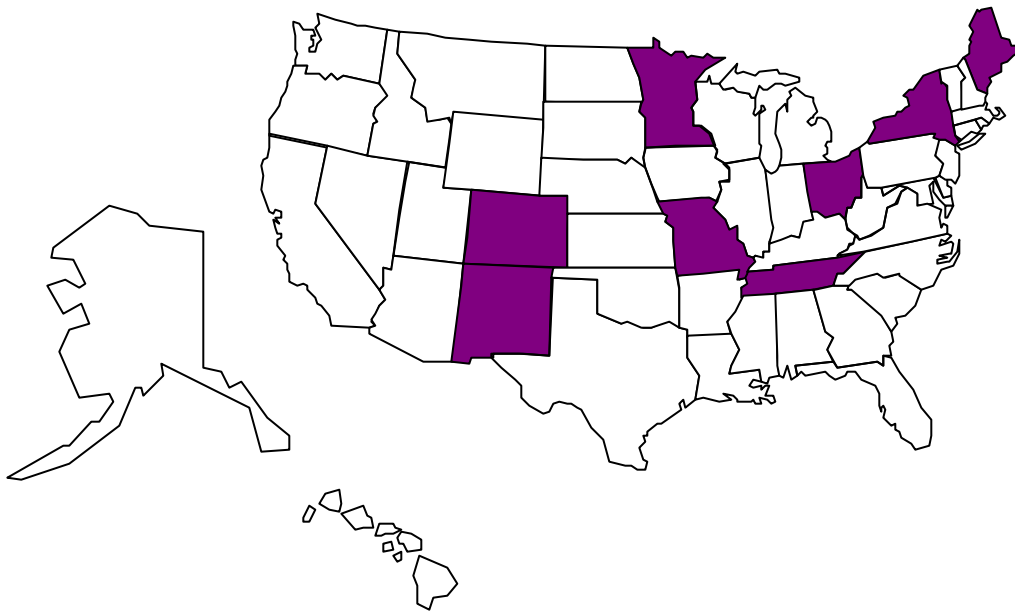
States, however, vary considerably in their interest and ability to take advantage of policy options and opportunities that would affect these environments. Research shows that only a few states use their advantage to institute innovative and far-reaching policies across all or most of the major environments affecting the health workforce. These states may, for example, create a statewide policy advisory council or develop a more comprehensive workforce database.

For traditional, political and budgetary reasons, most states, however, tend to concentrate their efforts on only a few policies and environments, ignoring potential means of encouraging broader change and reform. State workforce policy is often driven and shaped more by the structure of government in which legislators, bureaucracy and established interest groups function, than by actual and documented shortages of health professionals for needy populations and communities. Success in workforce policy is possible for these states, however, if it can be determined at what point(s) in the planning, education, regulation and placement process or environment the state can most effectively intervene and what are the most effective means of state intervention (i.e., regulation vs. appropriations, provider payer policies vs. state grant or loan programs, creating new initiatives vs. refining existing programs).

In general, states have not pursued a coherent and comprehensive set of policies aimed at promoting a reasonable health workforce. The typical state's attention to one or two types of policies and policy environments affecting the health workforce, particularly where need and wealth are not significantly part of the equation, suggest a process that is fragmented and often lacking in long-term effectiveness.

This project profiles and compares the influence of the major environments of supply and demand, education, practice location and incentives, licensure and regulation, and planning and analysis on the health workforce in and among eight (8) states.

Workforce Supply and Demand



Arguably, it is most important initially to understand the marketplace for a state's health care workforce. How many health professionals are in practice statewide and in medically underserved communities? What are the demographics of the population served? How is health care organized and paid for in the state? This section attempts to answer some of these questions by presenting state-level data collected from various sources.

ACCESS TO CARE

Table 1.

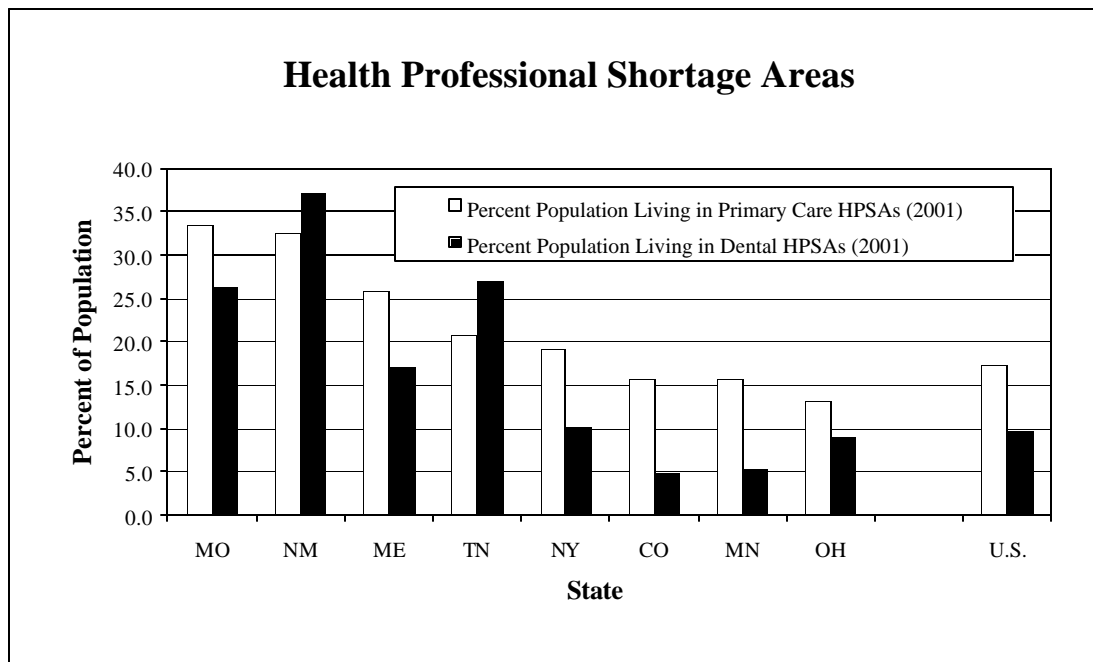
INDICATORS		PROFILE STATES								
		CO	ME	MN	MO	NM	NY	OH	TN	U.S.
Percent Non-elderly (under age 65) Without Health Insurance	1999-2000	16	13	9	10	27	17	12	12	16.0
	1997-1999	17	15	10	12	26	19	12	14	18.0
Percent Children Without Health Insurance	1999-2000	15	7	8	6	24	11	9	7	12.0
	1997-1999	14	11	8	9	22	14	10	10	14.0
Percent Population Not Obtaining Health Care Due to Cost (2000)		10.0	11.2	7.7	9.5	12.6	8.8	10.4	9.4	9.2
Percent Population Living in Primary Care HPSAs (2001)		15.8	25.8	15.7	33.5	32.5	19.1	13.1	20.8	17.3
Percent Population Living in Dental HPSAs (2001)		4.8	17.1	5.4	26.3	37.3	10.2	9.1	26.9	9.7
Percent Adults with Annual Family Income Less than \$15,000 Who Made Dental Visit in Preceding Year (1999)		43	38	N/A	42	45	53	43	37	---

HPSAs = Health Professional Shortage Areas

N/A = Data was not available

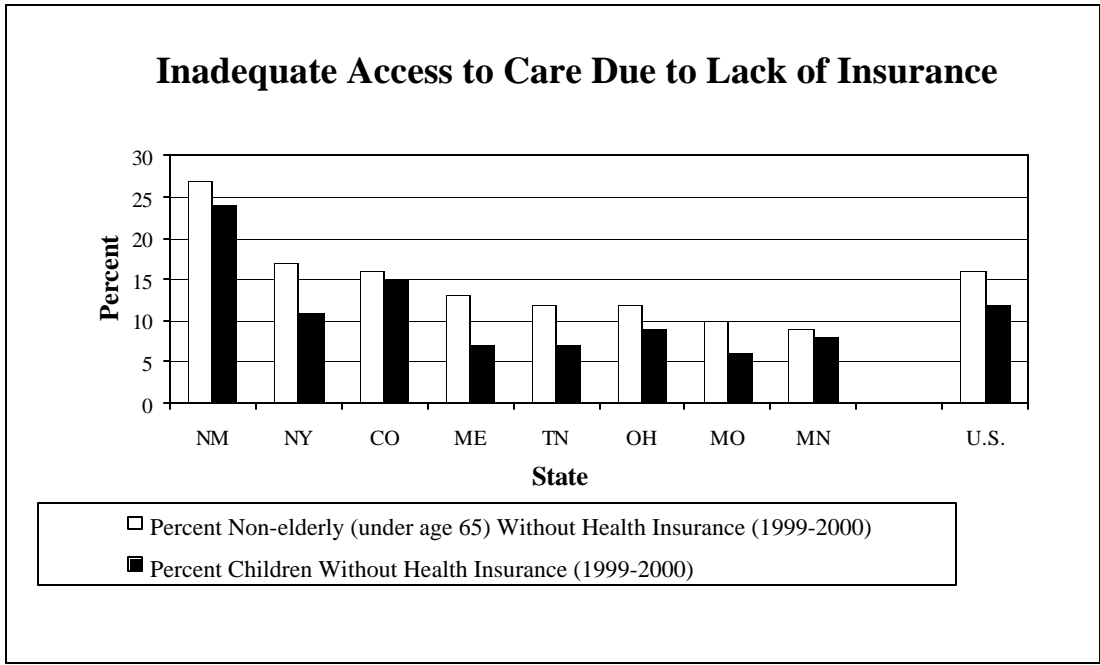
Sources: KFF, AARP, BPHC-DSD, GAO.

Chart 1A.



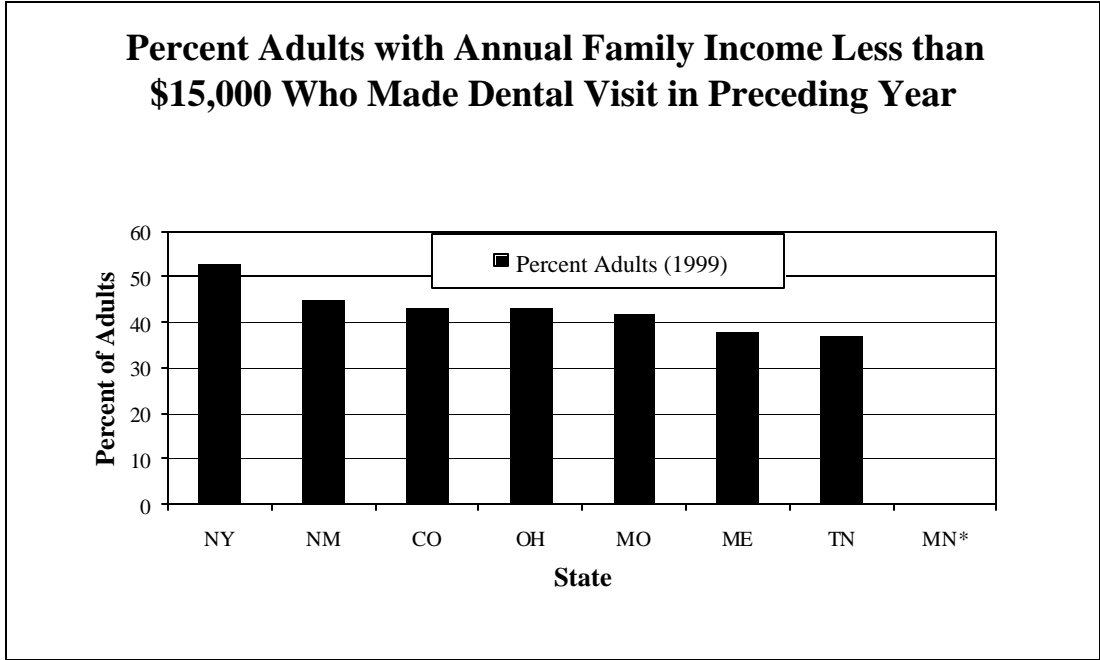
Five profile states---- Missouri, New Mexico, Maine, Tennessee, and New York----exceed the U.S. average proportion of people living in primary care HPSAs. Missouri, Tennessee, and New Mexico have more than double the proportion of people living in dental HPSAs than the U.S. as a whole.

Chart 1B.



New Mexico has significantly higher proportions of non-elderly and children without health insurance than the national average.

Chart 1C.



* Data was not available

In six of seven profile states where data was available, under half the adult population with family incomes less than \$15,000 visited a dentist in the preceding year.

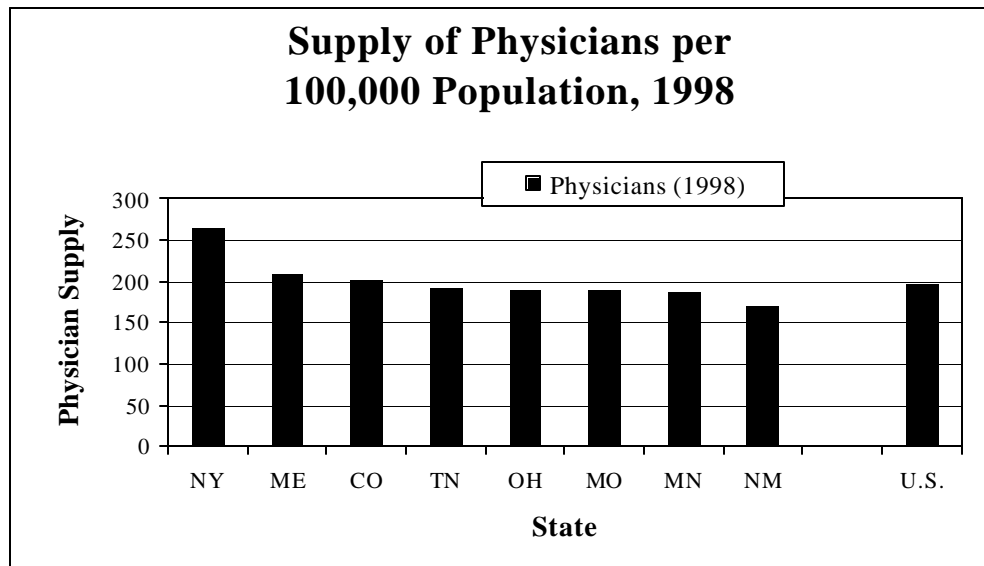
SUPPLY OF VARIOUS HEALTH CARE PROFESSIONALS

Table 2.

Professions		PROFILE STATES								
		CO	ME	MN	MO	NM	NY	OH	TN	U.S.
Supply per 100,000 population	Physicians (1998)	201	209.4	186.8	190.2	170.2	265	190.4	193	198
	Nurses									
	RNs (2000)	737	1025	957	960	656	843	882	872	782
	LPNs (1998)	160	214.0	353.1	275.5	162.7	268.5	294.9	354.9	249
	CNMs (2000)	3.5	3.9	2.9	1.0	4.8	3.1	1.6	1.4	2.1
	NPs (1998)	47.9	42.5	18.0	29.5	33.1	40.5	25.8	24.8	26.3
	CRNAs (1997)	4.7	10.6	19.1	12.1	7.0	4.8	10.2	15.7	8.6
	Physician Assistants (1999)	7.5	25.8	8.7	4.0	15.6	18.8	7.1	6.6	10.4
	Dentists (1998)	56.5	43.9	51.9	41.8	32.1	63.3	45.8	41.2	48.4
	Pharmacists (1998)	61.2	63.5	70.5	74.3	57.7	69.6	79.7	75.1	65.9
	Dental Hygienists (1998)	61.1	56.1	66.4	36.8	58.8	81.0	55.4	46.8	52.1
% Physicians Practicing Primary Care		30	30.0	37.0	25.0	33.0	35.0	28.0	31.0	30
% of MDs Who Are International Medical Graduates		6.0	12.0	11.0	20.0	12.0	43.0	26.0	13.0	24
% Registered Nurses Employed in Nursing		79.1	82.8	85.8	86.1	87.0	81.0	82.3	88.7	82.7

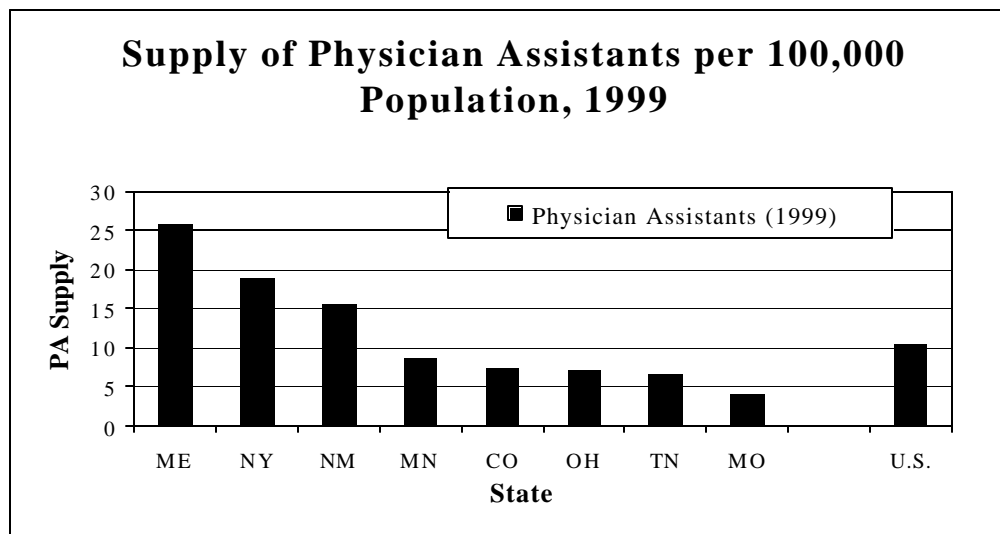
Sources: HRSA-BHPr.

Chart 2A.



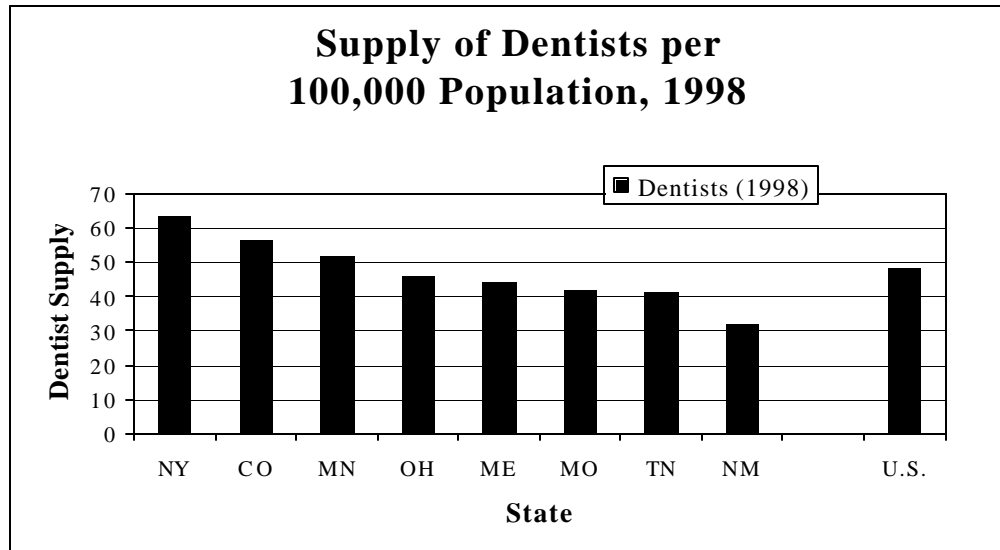
Five of eight profile states have fewer physicians per 100,000 population than the national average.

Chart 2B.



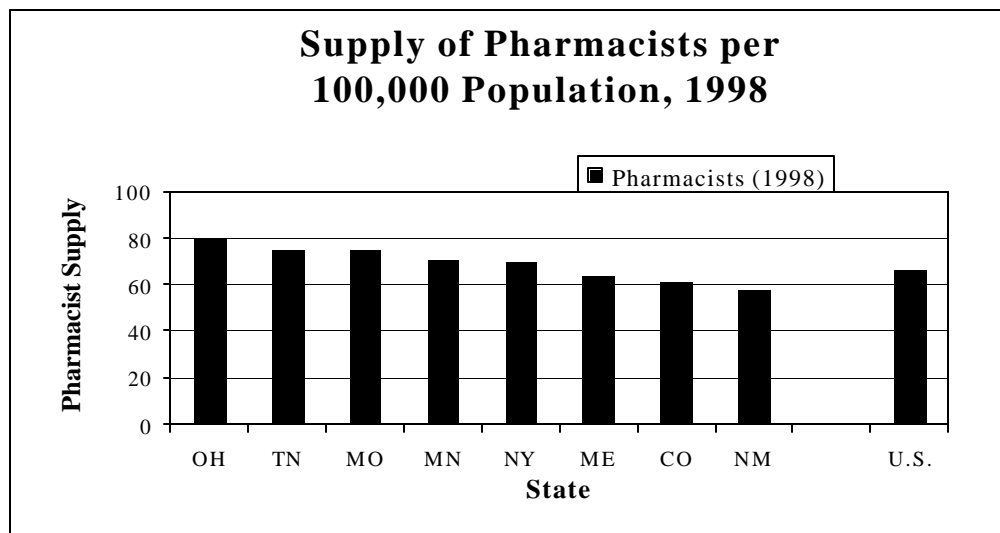
Maine and New York have more than twice as many physician assistants per 100,000 population as Colorado, Ohio, Tennessee and Missouri.

Chart 2C.



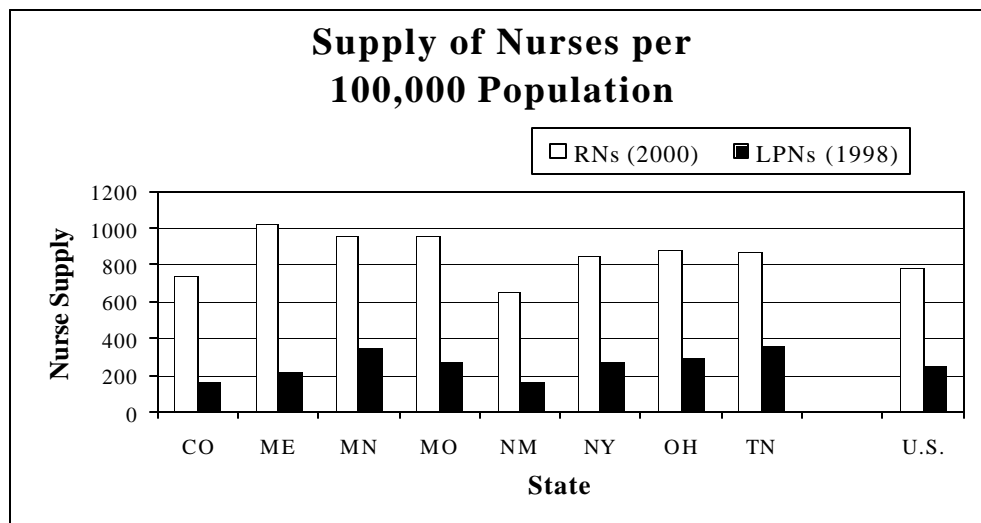
Only three profile states--- New York, Colorado and Minnesota----have more dentists per 100,000 population than the national average.

Chart 2D.



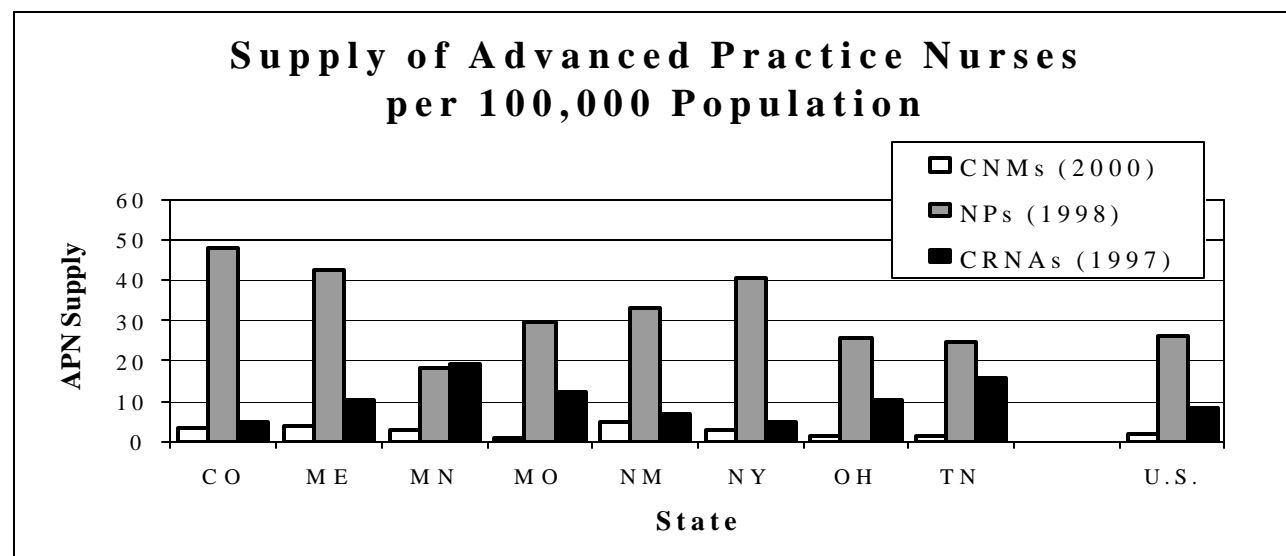
Three profile states---Colorado, Maine and New Mexico----have fewer pharmacists per 100,000 population than the national average.

Chart 2E.



Maine, Minnesota and Missouri have more RNs per 100,000 population than the other profile states. Minnesota and Tennessee have the fewest LPNs per 100,000 population. New Mexico and Colorado have the fewest RNs and LPNs per 100,000 population.

Chart 2F.



Colorado, Maine and New York have more NPs per 100,000 population than the other profile states. Minnesota and Tennessee have more CRNAs per 100,000 population than the other profile states. New Mexico has more than twice as many CNMs per 100,000 population as the national average.

NATIONAL HEALTH SERVICE CORPS (NHSC) 2001 FIELD STRENGTH

Table 3.

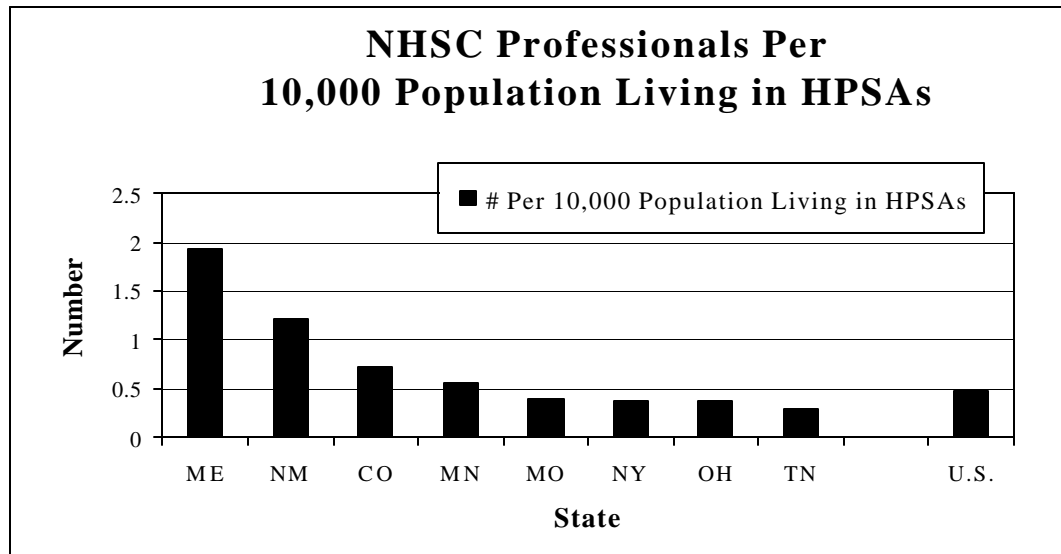
INDICATORS	PROFILE STATES								
	CO	ME	MN	MO	NM	NY	OH	TN	U.S.
Total NHSC Field Strength*	50	33	44	73	72	139	55	36	--
# Per 10,000 Population Living in HPSAs	0.73	1.93	0.57	0.39	1.22	0.38	0.37	0.30	0.49

* Includes physicians, nurses, dentists, pharmacists, dental hygienists, physician assistants and mental health professionals in placement.

HPSAs = Health Professional Shortage Areas

Source: BPHC-NHSC.

Chart 3A.



Maine and New Mexico have more than twice the NHSC professionals per 10,000 population living in HPSAs than the national average. Missouri, New York, Ohio, and Tennessee all have less than the national average.

MEDICAID REIMBURSEMENT OF PROFESSION SERVICES

Table 4.

INDICATORS		PROFILE STATES							
		CO	ME	MN	MO	NM	NY	OH	TN
Active Physicians	% Enrolled Receiving Annual Payments Greater Than \$10,000	1.2	N/A	20	N/A	3.7	7.4	21.4	N/A
	% Change in Medicaid Payment Rate, 1993-1998	26.41	49.6	1.27	1.00	10.54	-2.98	16.97	N/A*
	Medicaid Provides Bonus or Special Payment for Practice in Rural or Medically Underserved Area	No	N/A	No	No	No	Yes	No	N/A
Active Advanced Practice Nurses	% Enrolled Receiving Annual Payments Greater Than \$10,000	3.6	N/A	65	N/A	1.0	0.1	14.7	N/A
	Overall Increase of 10% or More in Medicaid Payment Rates in Past 5 years	No	N/A	No	Yes	Yes	No	Yes	N/A
	Medicaid Provides Bonus or Special Payment for Practice in Rural or Medically Underserved Area	No	N/A	No	No	No	No	No	N/A
Active Dentists	% Enrolled in Medicaid	36.0	N/A	87.8	27.4	*	*	24.8	N/A
	% Enrolled Receiving Annual Payments Greater Than \$10,000 ¹	18.0	N/A	30	N/A	8.4	10.4	29.7	N/A
	Overall Increase of 10% or More in Medicaid Payment Rates in Past 5 years	No	N/A	No	No	Yes	No	Yes	N/A
	Medicaid Provides Bonus or Special Payment for Practice in Rural or Medically Underserved Area	No	N/A	No	No	No	No	No	N/A
Number of Pharmacies Enrolled in Medicaid		844	N/A	986	1,331	550	6,621	2,692	N/A
Penetration Rate (%) of Medicaid and Commercial Managed Care Plans, 2000		36.0	27.0	27.8	32.9	30.8	34.0	24.7	32.1

¹ Generally seen as an indicator of significant participation in the Medicaid program.

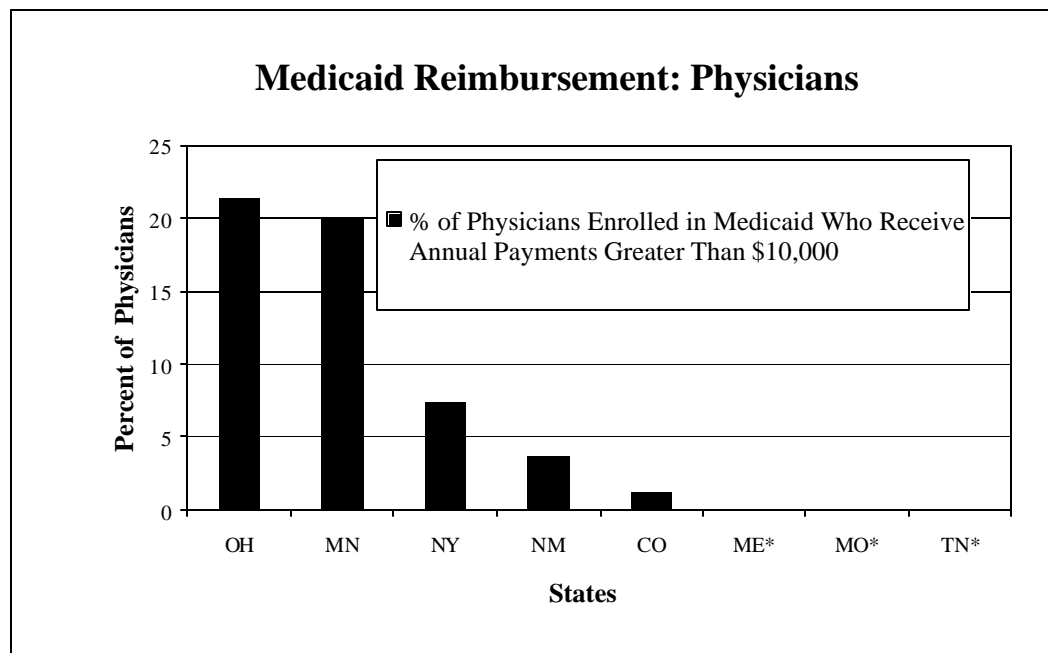
* Numerator data was unusable: dentists were apparently double-counted, perhaps due to varying participation in different health plans.

N/A = Data was not available

N/A* = Data was not applicable

Sources: State Medicaid agencies, Norton and Zuckerman "Trends", HPTS, AARP.

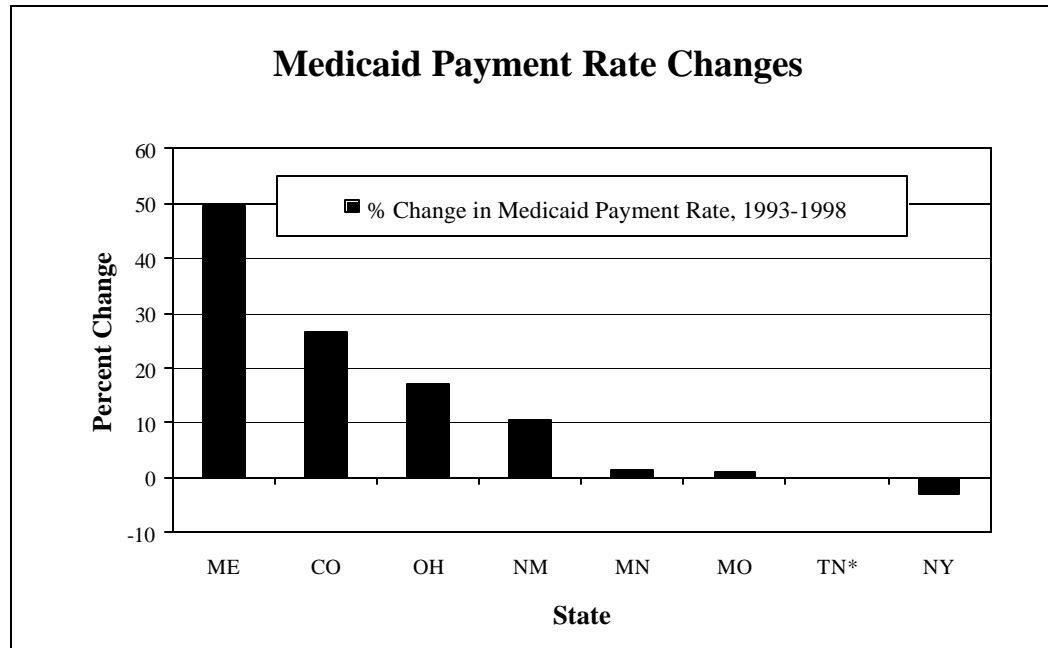
Chart 4A.



* Data was unavailable

In profile states with available data, less than 25% of physicians enrolled in Medicaid receive annual payments of \$10,000 or more. In New Mexico and Colorado, less than 5% receive annual payments of \$10,000 or more.

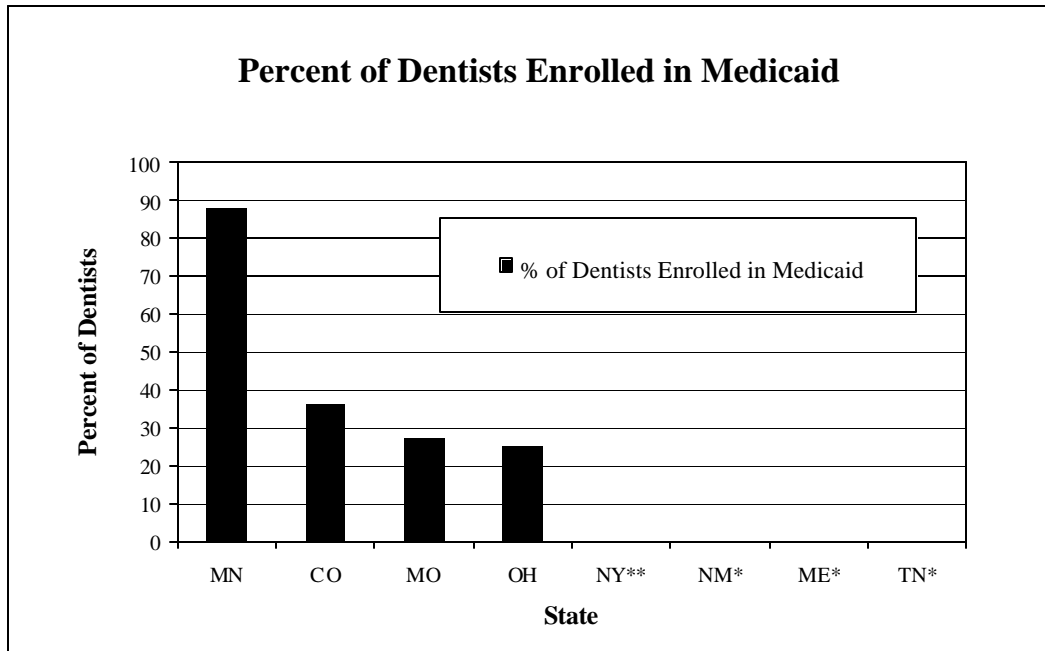
Chart 4B.



*Data was not applicable

Maine had a 50% change in Medicaid payment rates between 1993-1998. In contrast, Minnesota and Missouri had changes of less than 2% for the same time period.

Chart 4C.

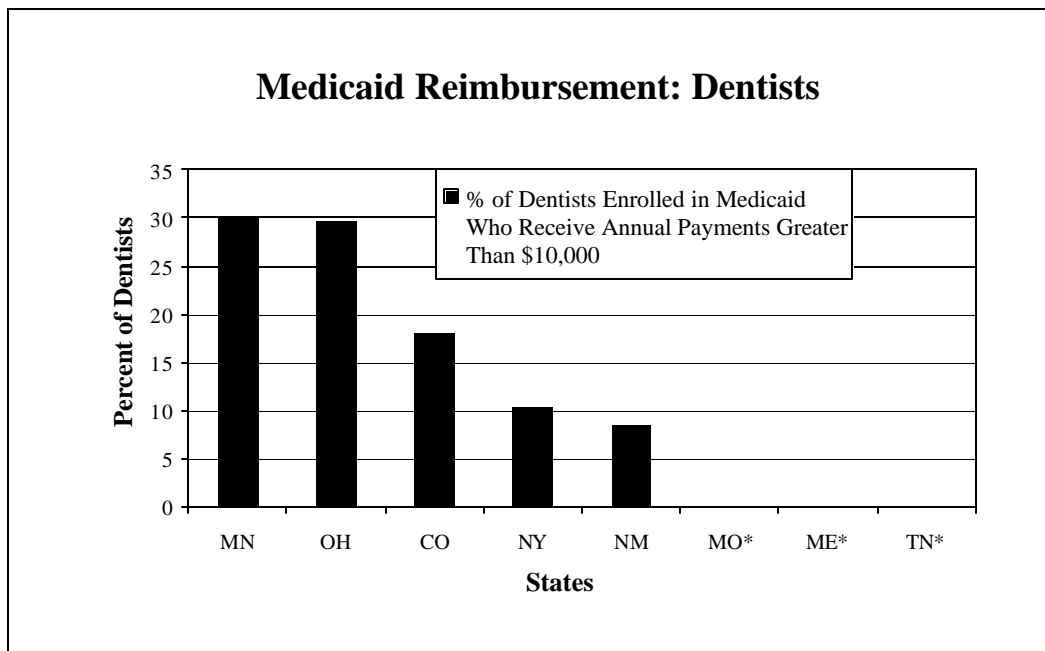


* Data was not available

** Numerator data was unusable: dentists were apparently double-counted, perhaps due to varying participation in different health plans.

Nearly 90% of Minnesota's dentists actively enroll to see patients in Medicaid. The other profile states have less than one-third of licensed dentists enrolled in Medicaid.

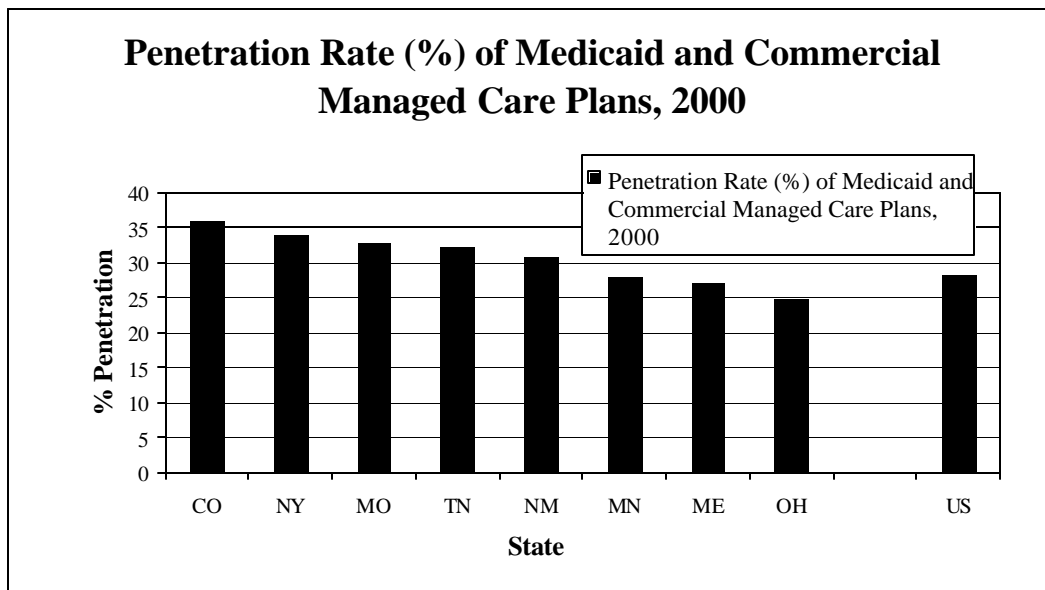
Chart 4D.



*Data was unavailable

In Minnesota and Ohio just under one third of dentists enrolled in Medicaid receive annual payments of more than \$10,000. In Colorado, New York and New Mexico, less than one-fifth of physicians in Medicaid receive more than \$10,000 annually.

Chart 4E.



Medicaid and commercial managed care plans have the highest penetration rates in Colorado and New York. Plans in Maine and Ohio have the lowest penetration rates.

SUMMARY AND ANALYSIS: Workforce Supply and Demand

In general, those profile states scoring comparatively higher on the various indicators of inadequate access to care also had overall supplies of various health professionals that were either below national averages or at appropriate levels. For example, the four profile states whose proportion of the population residing in dental health professional shortage areas (HPSAs) well exceeds the national average—Maine, Missouri, New Mexico and Tennessee—have numbers of dentists per 100,000 population that are below national averages. Just two profile states—Minnesota and New York—have a percent of the population not obtaining health care due to cost that is below the national average.

The importance of Medicaid as a payer to certain professions varies widely among the profiled states. In a growing number of states, Medicaid in fact appears to be less viable source of income to physicians and dentists. Believing that they are inadequately compensated for their services, large numbers of physicians are dropping out of Medicaid managed care plans; in many states, the problem of compensation is more of an issue between physicians and managed care plans than between physicians and Medicaid. Adequate compensation under fee-for-service Medicaid is still a major concern as well to most physicians and dentists. Despite a large Medicaid population, Medicaid payment rates for physicians have actually declined.

Most dentists, while they participate in Medicaid, have routinely decided to keep their involvement at a minimum. Minnesota fares much better than other profile states with nearly 9 out of 10 dentists participating in the program. About 30 percent of those dentists enrolled in Minnesota and Ohio receive over \$10,000 in annual Medicaid payments. Ohio's Medicaid dentist fees have risen substantially in recent years. In New York, concerns by dentists over low Medicaid payment rates resulted in a 2000 suit of the state by the state dental association. As a result of the suit, dentists won the right to receive incremental Medicaid rate increases.

To boost dentist participation in Medicaid, experts point to the need for states to not only raise payment rates, but to also:

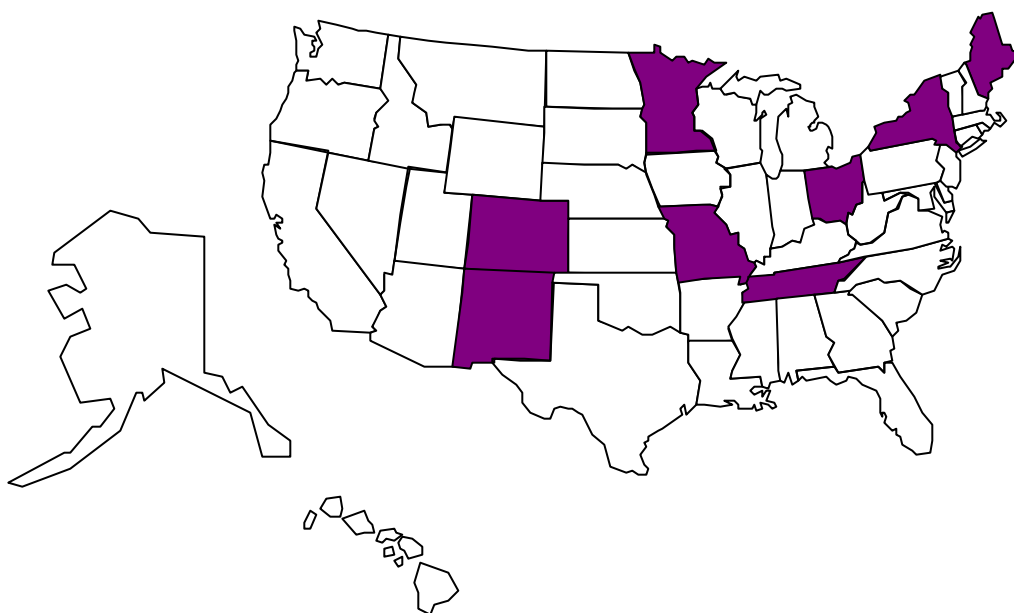
- Better understand dentist geographic distribution and practice patterns;
- Consider having Medicaid offer sign-up bonuses or make available tax credits to dentists;
- Simplify administrative tasks under Medicaid;
- Educate Medicaid clients about the dental health system and the importance of preventive care;
- Create or expand loan forgiveness programs for dentists willing to take public insurance;
- Increase dental capacity of publicly supported providers such as community health centers and local health departments;
- Consider increasing the number of school dental clinics and mobile vans;
- Improve community-based training opportunities for dentists and use Medicaid funds for graduate medical education to support general dentistry residencies; and
- Revise practice acts to expand scope of practice for dental hygienists.

Many profile states have addressed one or more of these strategies. Seven of the 8 profile states have NHSC or state loan repayment programs that include dentists as eligible providers.

Several inconsistencies between supply and need (demand) are documented among the profile states. Missouri is an example of a state where having health insurance does not guarantee access to health services. The good news is that the proportion of the state's population without health insurance is substantially below the national average. The bad news is that the percentage of the population residing in HPSAs is well above U.S. figures. In fact, just four counties in Missouri are not designated as HPSAs. The proportion of the state's population living in dental HPSAs is twice the national average, and statewide, Missouri has a significantly smaller ratio of dentists and dental hygienists than the U.S. as a whole.

The appearance of such inconsistencies in several states, as noted earlier, is not surprising. Despite the ability of most states to ignore good health workforce data and planning in the face of other political and financial pressures, a few states have excelled in developing a good health professions information system. Minnesota and New York, at least for some health professions, are good examples of this. Minnesota's Office of Rural Health and Primary Care has in the past few years produced some useful supply and demand analyses as required by the Legislature. New York, through its state health workforce studies center at the State University of New York at Albany, has produced numerous studies on physician and nurse supply in the state that are widely respected by state policymakers.

Health Professions Education



State efforts to help ensure an adequate supply of health professionals can be understood in part by examining data on the state's health professions education programs—counts of recent students and graduates, amounts of state resources invested in education, and other factors. State officials can gauge how well these providers reflect the state's population by also examining how many students and graduates are state residents or minorities. Knowing to what extent states are also investing in primary care education and how many medical school graduates remain in-state to complete residencies in family medicine is also important.

PHYSICIANS: UNDERGRADUATE MEDICAL EDUCATION

Table 5.

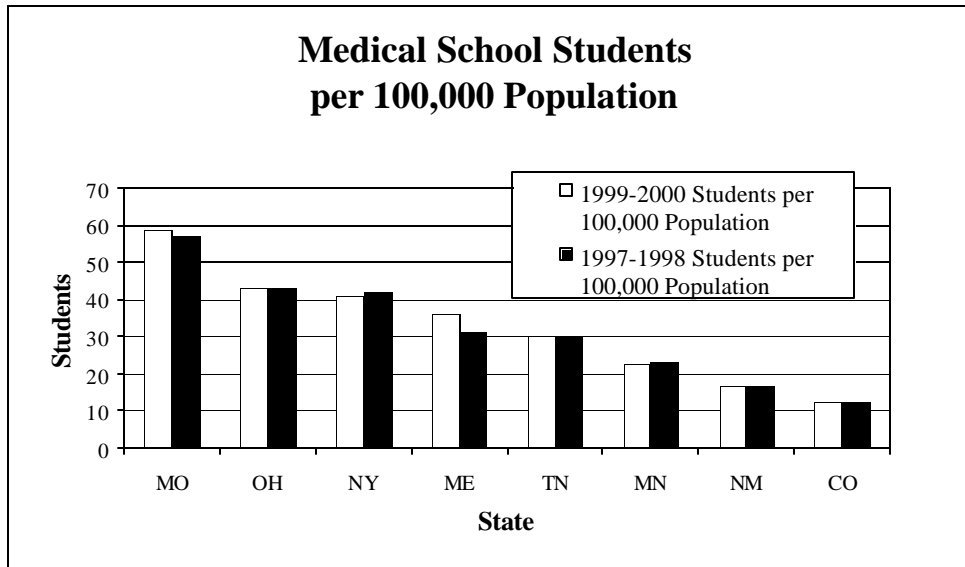
INDICATORS		PROFILE STATES							
		CO	ME	MN	MO	NM	NY	OH	TN
Medical Schools (Allopathic and Osteopathic)	Total # of Schools	1	1	3	6	1	13	8	4
	# of Public Schools	1	0	2	2	1	4	7	2
	# of Private Schools	0	1	1	4	0	9	1	2
	# of Osteopathic Schools	0	1	0	2	0	1	1	0
Medical School Students (Allopathic and Osteopathic)	# in 1999-2000	524	460	1113	3,291	305	7,944	4,877	1,713
	# Per 100,000 population, 1998-1999 ¹	12.2	36.1	22.6	58.8	16.8	41.0	43.0	30.1
	# in 1997-1998	526	401	1149	3,201	305	7,968	4,905	1,723
	# Per 100,000 population, 1997-1998 ¹	12.2	31.5	23.4	57.2	16.8	41.8	43.0	30.3
	% Newly Entering (Allopathic) who are State Residents, 1999-2000	87.7	N/A*	80.4	47.8	97.3	60.5	88.6	54.8
	State and/or Most Training Programs Require Students in Some/All Schools to Complete Primary Care Clerkship	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Medical School Graduates (Allopathic and Osteopathic)	# in 2000	125	110	275	764	86	1,953	1,153	416
	# Per 100,000 population, 2000 ¹	2.9	8.6	5.6	13.7	4.7	10.3	10.2	7.3
	# in 1998	120	74	284	772	74	1,970	1,198	429
	# Per 100,000 population, 1998 ¹	2.8	5.8	5.8	13.8	4.1	5.1	10.5	7.5
	% Graduates (Allopathic) who are Underrepresented Minorities (1994-1998) U.S. average: 10.5	9.9	N/A*	6.45	4.13	16.76	8.43	13.74	20.09
	% 1987-1993 Medical School Graduates (Allopathic) Entering Generalist Specialties U.S. average: 26.7	33.8	N/A*	35.2	25.6	30.45	21.35	29.45	27.9
State Appropriations to Medical Schools (Allopathic and Osteopathic)	Total State Appropriations (\$ in millions) 1999-2000	18.35	0.264	65.9	19.5	42.2	204	220.2	84.9
	State Appropriations Per Medical Student (\$ in thousands) 1999-2000	35.02	0.57	59.24	5.94	138.28	25.69	45.14	49.54

¹ Denominator number is state population from 2000 U.S. Census.

N/A* = Data was not applicable

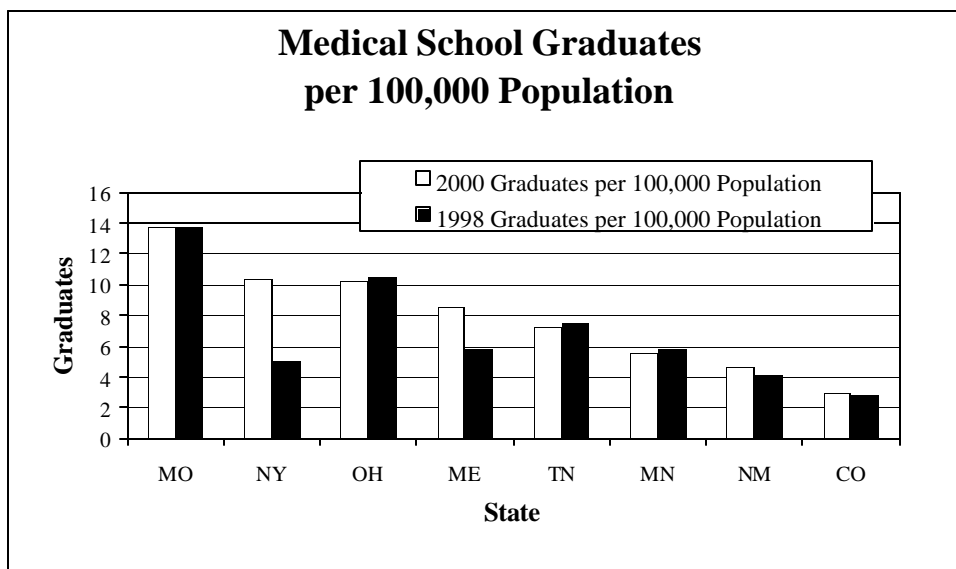
Sources: AAMC, AAMC Institutional Goals Ranking Report, AACOM, Barzansky et al. "Educational Programs", State higher education coordinating boards.

Chart 5A.



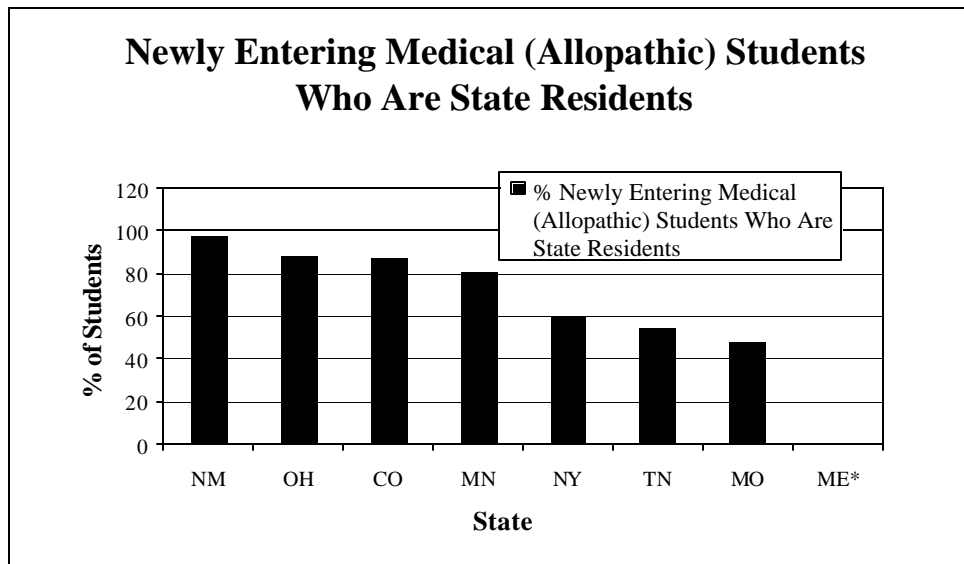
Missouri, Ohio, and New York have more than twice as many medical students per 100,000 population as New Mexico and Colorado.

Chart 5B.



Missouri, New York, and Ohio have graduated more than twice as many medical students per 100,000 population as New Mexico and Colorado.

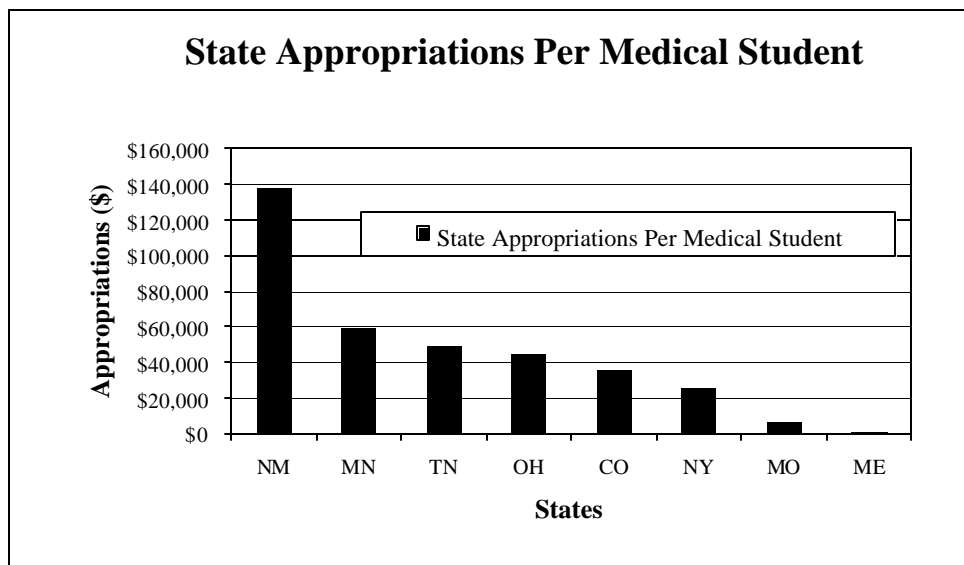
Chart 5C.



* Maine does not have an allopathic medical school

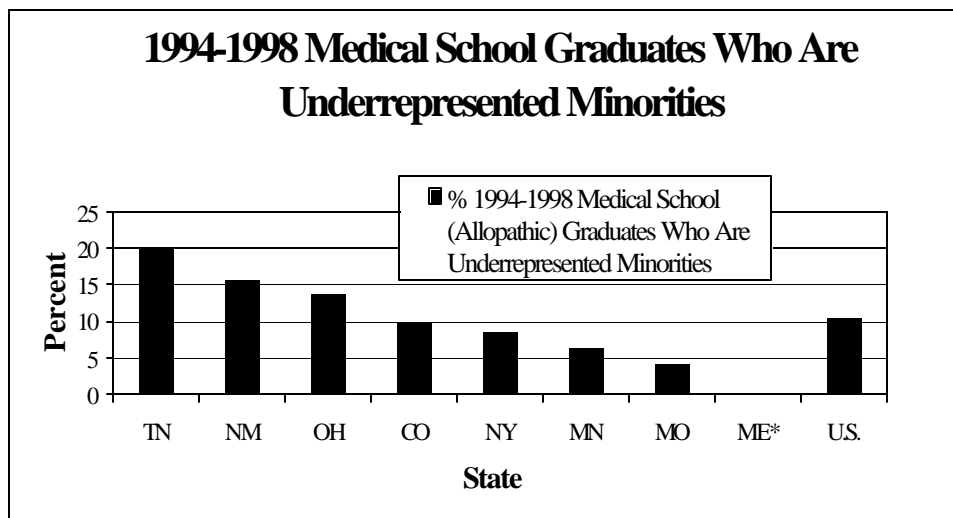
Less than 60% of newly entering medical students in Tennessee and Missouri are state residents. In contrast, nearly all of the newly entering medical students in New Mexico are state residents.

Chart 5D.



New Mexico appropriates more than twice as much money per medical student as do any of the other profile states.

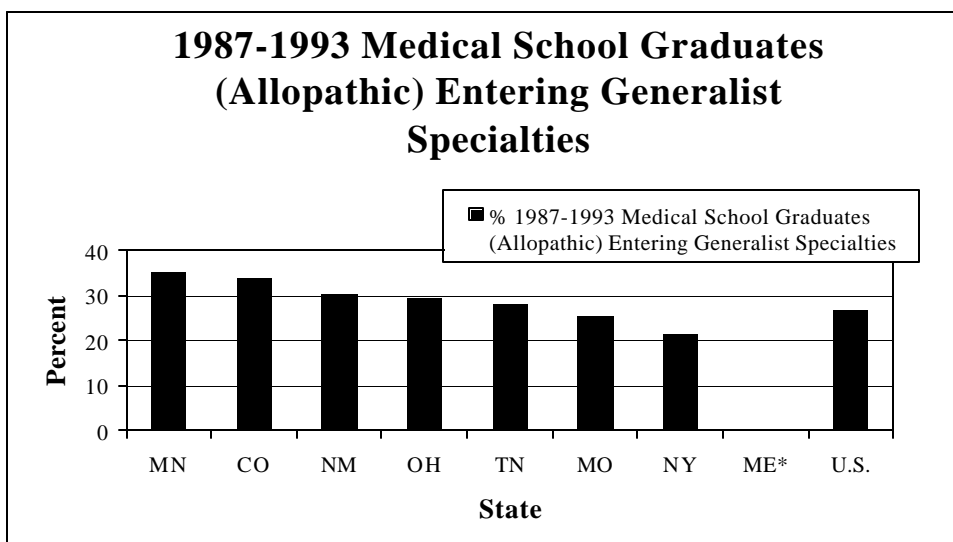
Chart 5E.



* Maine does not have an allopathic medical school

Tennessee has a higher percentage of underrepresented minority medical school graduates than any other profile state. (20 percent) In Colorado, Missouri, and New York, underrepresented minorities make up less than 10% of medical school graduates.

Chart 5F.



* Maine does not have an allopathic medical school

Minnesota and Colorado had higher percentages of their 1987 to 1993 medical school graduates entering generalist specialties than the other profile states. Six of the eight profile states have percentages that exceed the national average.

PHYSICIANS: GRADUATE MEDICAL EDUCATION

Table 6.

INDICATORS		PROFILE STATES							
		CO	ME	MN	MO	NM	NY	OH	TN
Number of Residency Programs (Allopathic and Osteopathic), 1999-2000		80	24	148	217	44	1,129	414	161
Residents (Allopathic and Osteopathic)	# 1999-2000	987	358	1984	2,420	433	14,738	4,737	1,856
	# Per 100,000 Population, 1999-2000 ²	23	28	40	43	24	78	42	33
	% From In-State Medical School, 1999-2000 ¹	18.8	N/A*	27.9	26.6	19.6	25.7	31.1	26.4
	% Who Are International Medical Graduates, 1999-2000 <u>U.S. average: 26.4</u>	5.1	11.0	20.3	25.3	11.8	48.9	26.2	17.7
	State and/or Most Training Programs Require Some or All Residents to be Offered a Rural Rotation	Yes	No	No	No	Yes	No	No	No
Residencies in Family Medicine	# of Residencies, 1999-2000	11	4	12	7	5	26	24	10
	# of Residents, 1999-2000	200	N/A	64	64	16	92	126	53
	# Per 100,000 Population, 1999-2000 ²	4.6	N/A	1.3	1.1	0.88	0.48	1.1	0.93
	% In-State Medical School Graduates who were First Year Family Medicine Residents, 1995-2000 <u>U.S. average: 15.2</u>	20.2	N/A*	27.7	14.1	22.6	6.7	19.2	14.3
	% In-State Medical School Graduates Choosing Family Medicine Who Entered In-State Family Medicine Residency, 1995-2000 <u>U.S. average: 48.3</u>	52.0	N/A*	62.9	39.5	33.3	34.4	53.4	44.7
State Financing of Graduate Medical Education	State GME Appropriations (millions of \$), 2001-2002 ¹	2.37	0	N/A	N/A	N/A	N/A	N/A	N/A
	State GME Appropriations (thousands of \$) Per Medical Resident	11.85	0	N/A	N/A	N/A	N/A	N/A	N/A
	Medicaid GME Payments (\$ in millions), 1998 ³	8.0	2.4	39.0	26.7	4.4	812	115.7	46.3
	Medicare GME Payments (\$ in millions), 1998 ³	34.2	25.07	88.17	75.32	9.66	1220	368.11	109.28

¹ Allopathic residents only.

² Denominator is state population from 2000 U.S. Census.

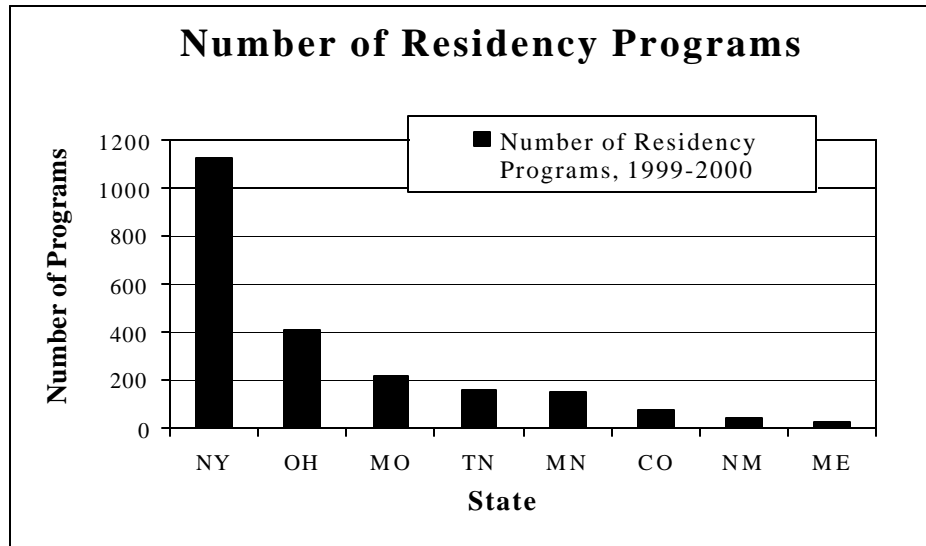
³ Explicit payments for both direct and indirect GME cost.

N/A = Data was not available

N/A* = Data was not applicable

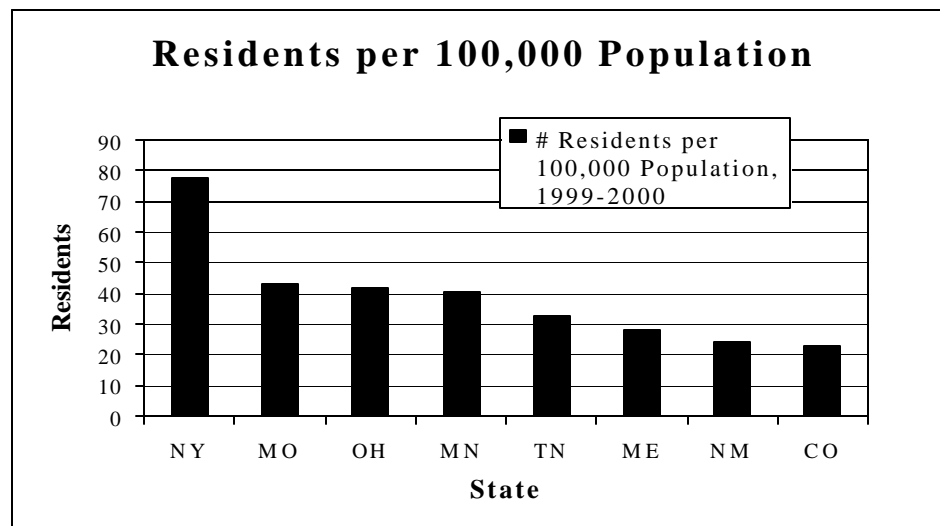
Sources: AMA, AMA [State-level Data](#), AACOM, State higher education coordinating boards, Henderson "Funding", Oliver et al. "State Variations", AAFP, AAFP [State Legislation](#), Kahn et al., Pugno et al. and Schmittling et al. "Entry of U.S. Medical School Graduates".

Chart 6A.



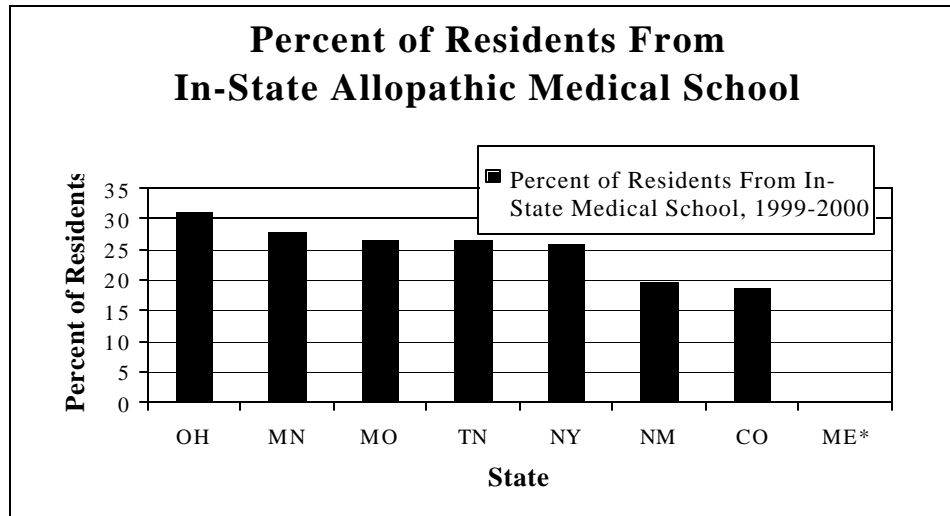
New York has more than three times as many residency programs as most of the other profile states.

Chart 6B.



New York has nearly twice as many residents per 100,000 population as all of the other profile states.

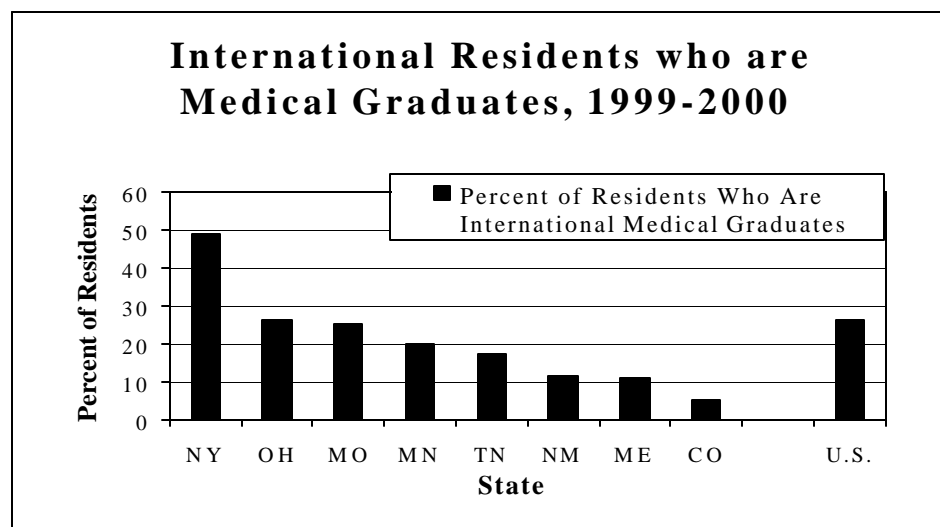
Chart 6C.



* Maine does not have an allopathic medical school

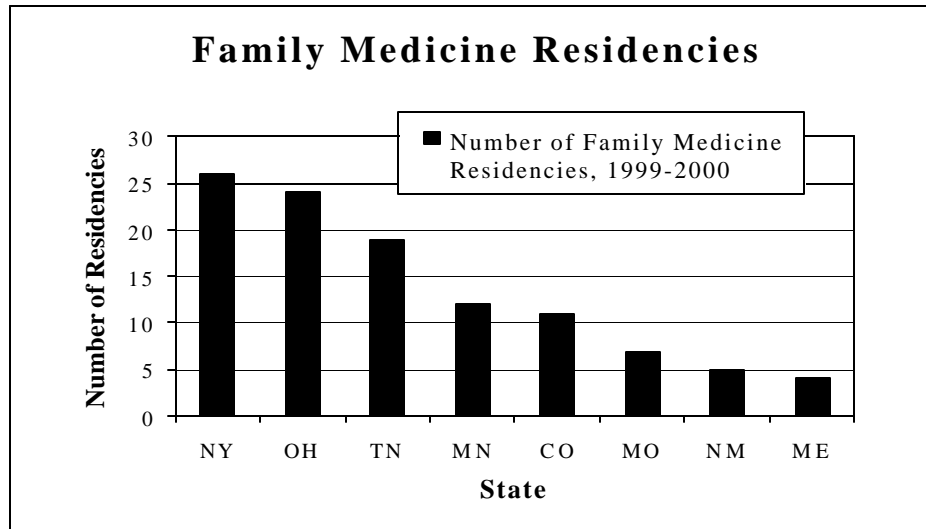
Thirty-one percent of residents in Ohio are from and in-state medical school, while less than one-fifth of the residents in New Mexico and Colorado attended a medical school in state.

Chart 6D.



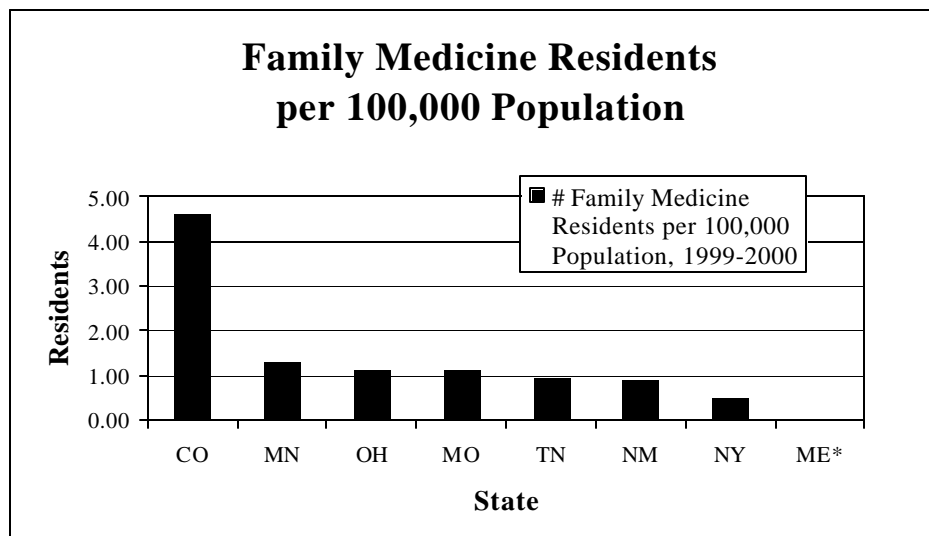
The percentage of residents who are International Medical Graduates (IMGs) in New York is nearly twice that of the national average. The percentage of IMG residents in the remaining profile states is below the national average.

Chart 6E.



New York, Ohio and Tennessee have the most family residency programs. Maine has fewer than five residency programs in the state.

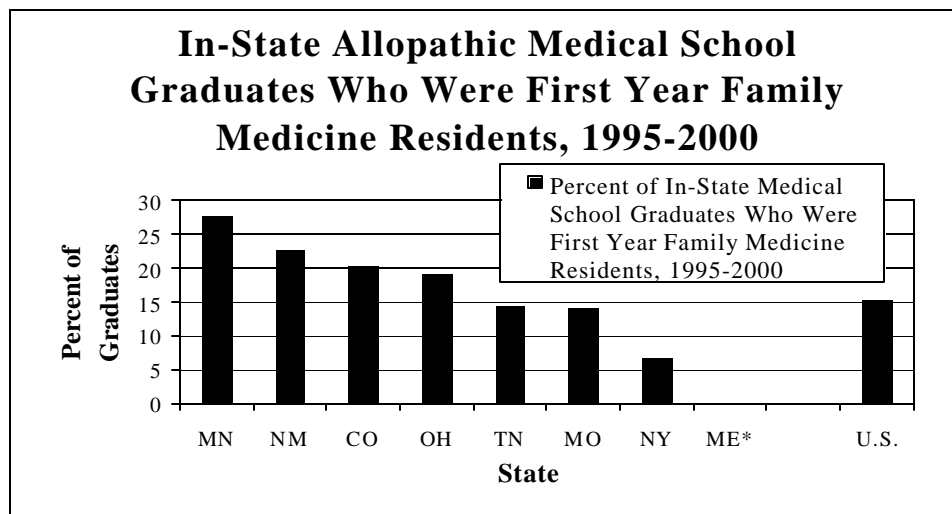
Chart 6F.



* Data was not available

Colorado has more than four times the number of family medicine residents per 100,000 population than most of the other profile states. New York and New Mexico have less than one family medicine resident per 100,000 population.

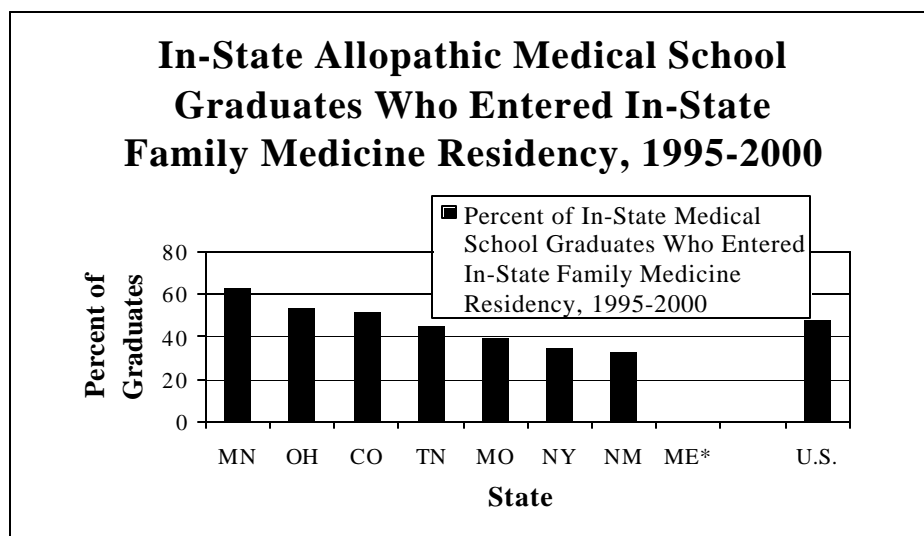
Chart 6G.



* Maine does not have an allopathic medical school

Over a quarter of Minnesota's medical school graduates were first-year family residents between 1995 and 2000. New Mexico, Colorado and Ohio also had higher percentages of graduates who were first-year family residents higher than the national average percentage.

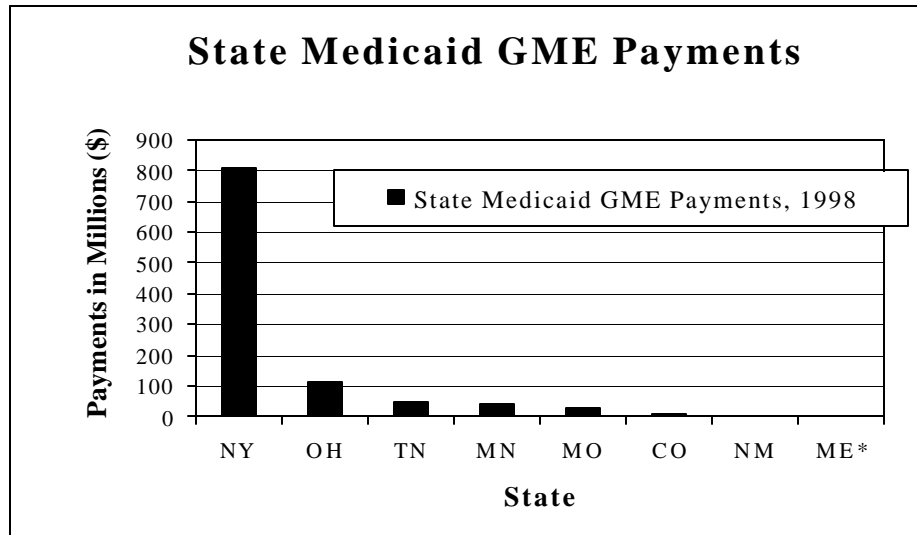
Chart 6H.



* Maine does not have an allopathic medical school

Over half of the in-state medical graduates in Minnesota, Ohio and Colorado entering family medicine enter an in-state residency.

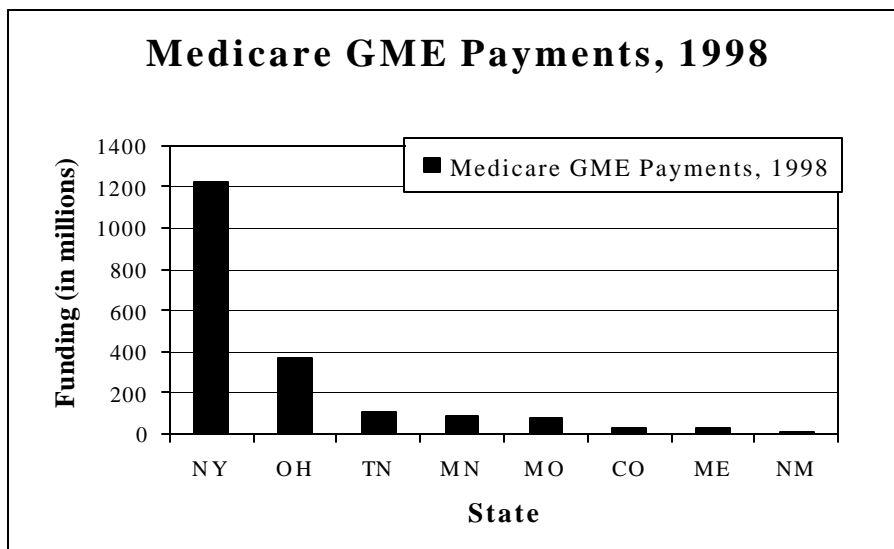
Chart 6I.



* Maine does not have an allopathic medical school

Most of the profile states have Medicaid GME payments of less than \$100 million. New York makes Medicaid GME payments of over \$800 million.

Chart 6J.



Medicare funding of GME payments is less than \$100 million for most of the profile states. In New York, Medicare GME funding is over \$1.2 billion.

NURSING EDUCATION

Table 7.

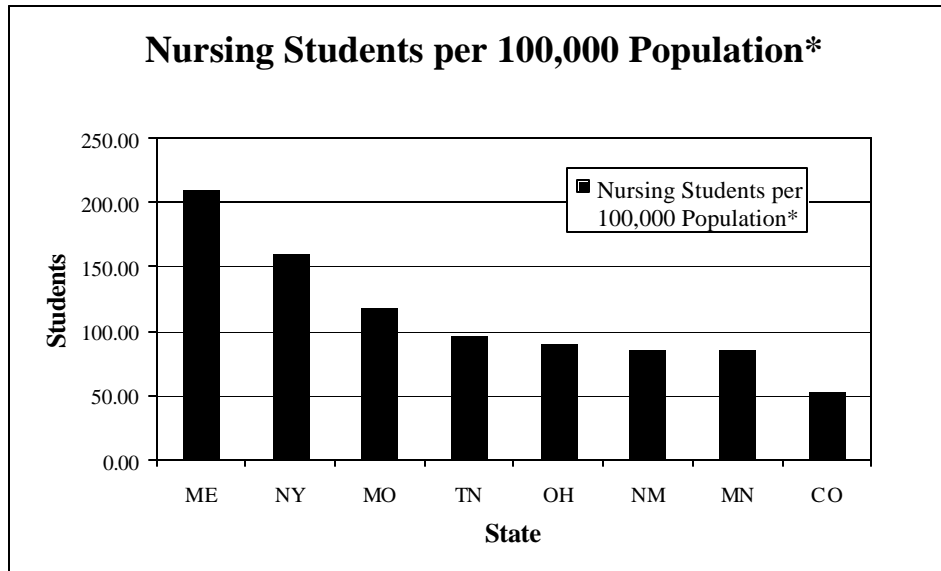
INDICATORS		PROFILE STATES							
		CO	ME	MN	MO	NM	NY	OH	TN
Nursing Schools	Total # of Schools	17	13	26	50	15	101	53	33
	# of Public Schools	16	9	19	26	15	56	35	20
	# of Private Schools	1	4	7	24	0	45	18	13
Nursing School Students	Total # of Students *	2257	2,680	4,181	6,629	1,562	30,307	10,295	5,440
	# Per 100,000 Population **	52.5	210.2	85.0	118.5	85.9	159.7	90.7	95.6
	# of Associate Degree Students, 1998-1999	572	559	1736	1739	932	15,394	4271	1931
	# of Baccalaureate Students	1998-1999	1148	1700	1902	3797	603	10,985	4915
		1999-2000	1056	1873	1837	3116	519	9923	4100
	# of Masters Students	1998-1999	378	421	512	996	27	3713	1056
		1999-2000	381	429	614	1092	167	3441	1316
	# of Doctoral Students	1998-1999	159	0	32	97	0	215	53
		1999-2000	152	0	35	110	0	224	251
Nursing School Graduates	Total # of Graduates *	907	599	1,804	2,422	672	8,462	4053	2139
	# Per 100,000 Population **	21.1	47.0	36.7	43.3	36.9	44.6	35.7	37.6
	# of Associate Degree Graduates, 1999	324	272	807	854	453	4362	1993	823
	# of Baccalaureate Graduates	# in 1999	415	270	757	1271	219	2965	1739
		# in 2000	454	247	694	1074	249	2638	1438
	# of Masters Graduates	# in 1999	146	57	231	285	50	1103	314
		# in 2000	126	47	191	275	43	1066	443
	# of Doctoral Graduates	# in 1999	22	0	9	12	0	32	7
		# in 2000	44	0	12	11	0	21	20

* This number is the total of all associate, baccalaureate, masters and doctoral students/ graduates, using the most recent data available.

** This figure uses the total number of students/ graduates from the figure above and the state population from the 2000 U.S. Census.

Sources: NLN, AACN.

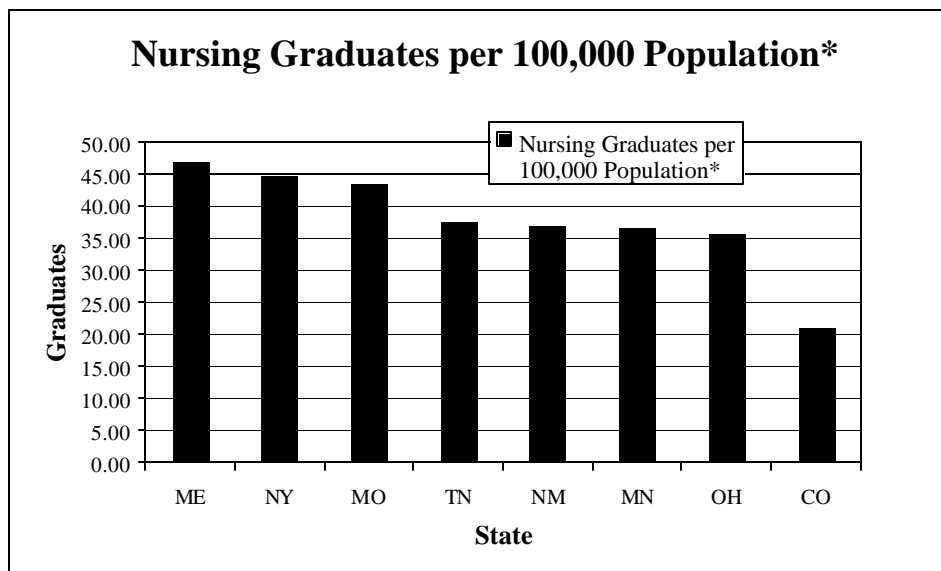
Chart 7A.



* Number of students is the total number of all associate, baccalaureate, masters and doctoral students, using the most recent data available; denominator is state population from the 2000 U.S. Census.

Maine and New York have the most nursing students per 100,000 population. In contrast, Colorado has only a third to one-fourth the number of nursing students per 100,000.

Chart 7B.



* Number of students is the total number of all associate, baccalaureate, masters and doctoral students, using the most recent data available; denominator is state population from the 2000 U.S. Census.

Most of the profile states graduate more than 35 nursing school graduates per 100,000 population. Colorado has only 21 nursing graduates per 100,000 population.

DENTAL EDUCATION

Table 8.

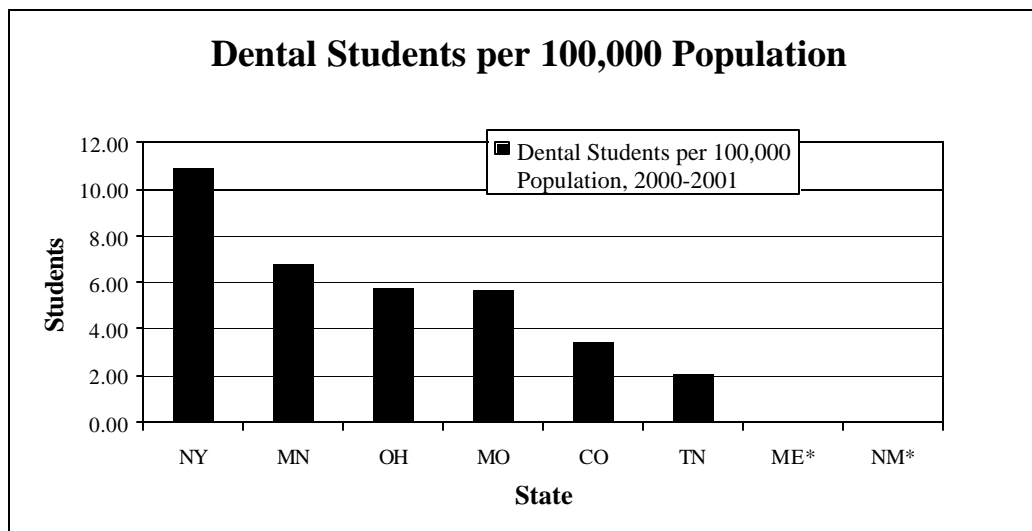
INDICATORS		PROFILE STATES							
		CO	ME	MN	MO	NM	NY	OH	TN
Dental Schools	Total # of Schools	1	0	1	1	0	4	2	2
	# of Public Schools	1	0	1	1	0	2	1	1
	# of Private Schools	0	0	0	0	0	2	1	1
Dental Students	Total # of Students, 2000-2001	147	0	335	320	0	2,063	662	529
	# Per 100,000 Population, 2000-2001	3.42	0	6.8	5.7	0	10.9	5.8	9.3
Dental Graduates	Total # of Graduates, 2000	34	0	79	69	0	488	155	119
	# Per 100,000 Population, 2000	0.79	0	1.6	1.2	0	2.6	1.4	2.1
State Appropriations (\$) Per Dental Student, 1998-1999		33,794	N/A*	21,437	31,726	N/A*	16,187	22,000	18,147

• Denominator number is state population from the 2000 U.S. Census.

N/A* = Data was not applicable

Source: ADA.

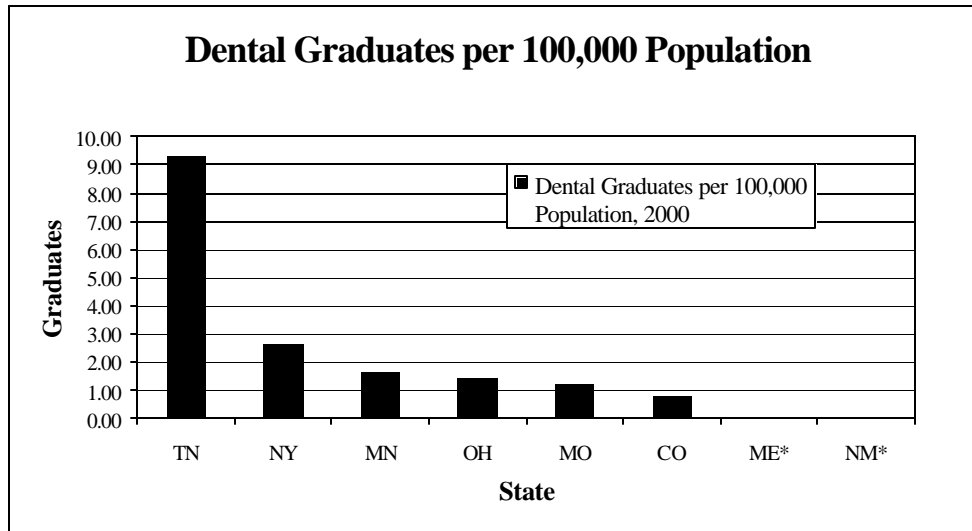
Chart 8A.



* Maine and New Mexico do not have any dental schools.

New York has more than four times the number of dental students per 100,000 population as Colorado and Tennessee.

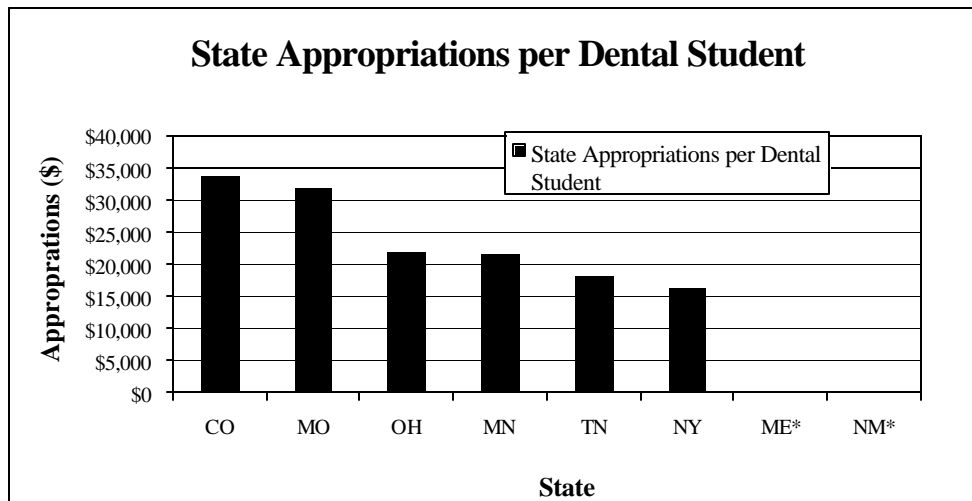
Chart 8B.



* Maine and New Mexico do not have any dental schools.

Tennessee has over nine dental graduates per 100,000 population—nearly three times more than any of the other profile states.

Chart 8C.



* Maine and New Mexico do not have any dental schools.

Colorado and Missouri appropriate more than \$30,000 per dental student, an amount significantly higher than any of the other profile states.

PHARMACY EDUCATION

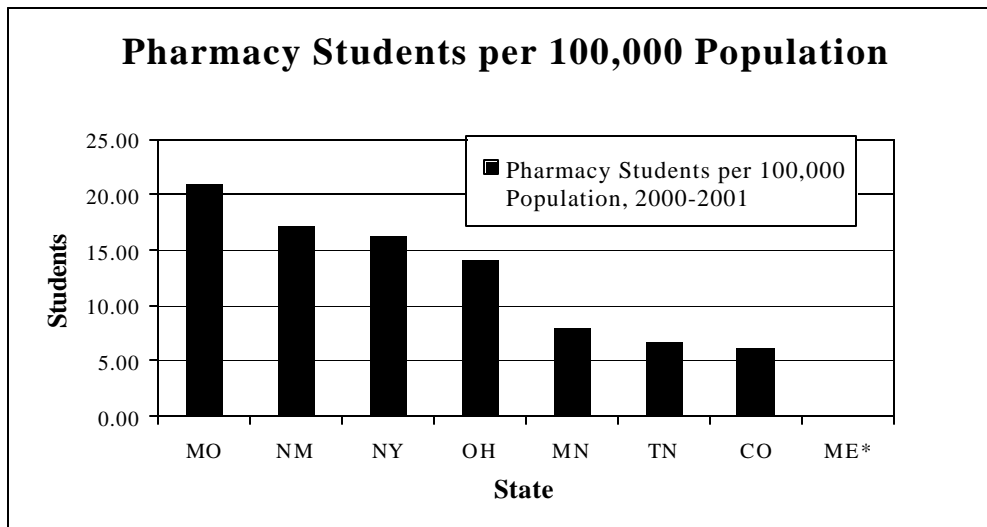
Table 9.

INDICATORS		PROFILE STATES							
		CO	ME	MN	MO	NM	NY	OH	TN
Pharmacy Schools	Total # of Schools	1	0	1	2	1	4	4	1
	# of <i>Public</i> Schools	1	0	1	1	1	1	3	1
	# of <i>Private</i> Schools	0	0	0	1	0	3	1	0
Pharmacy School Students, 2000-2001	Total # of Students	261	0	391	1,167	312	3,065	1,605	381
	# Per 100,000 Population*	6.1	0	7.9	20.9	17.2	16.2	14.1	6.7
	# Baccalaureate Students	61	0	0	665	0	1003	575	0
	# Doctoral (PharmD) Students	200	0	391	502	312	2062	1,030	381
Pharmacy School Graduates, 2000	Total # of Graduates	102	0	85	193	115	589	398	97
	# Per 100,000 Population*	2.4	0	1.7	3.5	2.2	3.1	3.5	1.7
	# Baccalaureate Graduates	102	0	0	134	75	589	333	0
	# Doctoral (PharmD) Graduates	0	0	85	59	40	0	65	97

* Denominator number is state population from the 2000 U.S. Census.

Source: AACP.

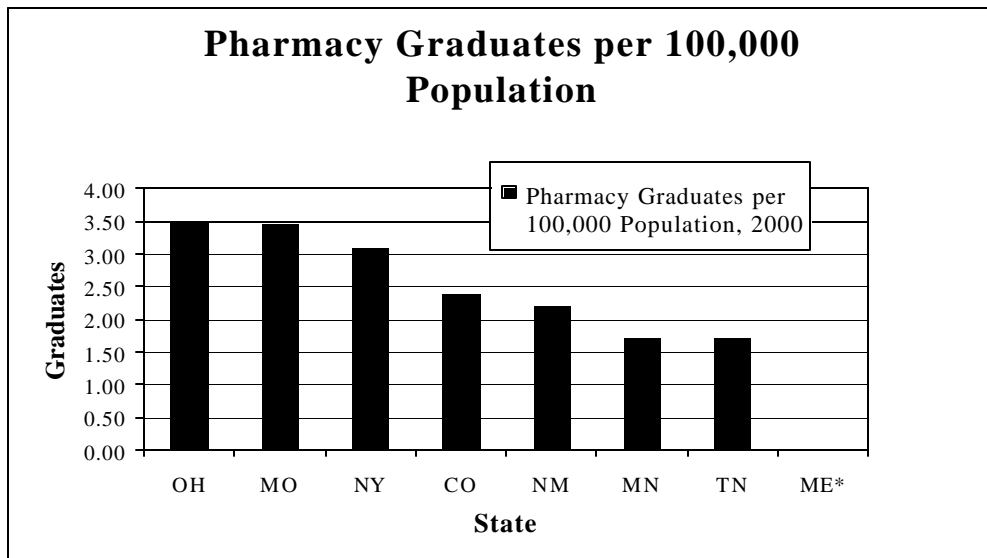
Chart 9A.



* Maine does not have a school of pharmacy.

Three profile states—Minnesota, Tennessee and Colorado--have fewer than ten pharmacy students per 100,000 population.

Chart 9B.



*Maine does not have a school of pharmacy.

Most of the profile states graduate less than three pharmacy graduates per 100,000 population.

PHYSICIAN ASSISTANT EDUCATION

Table 10.

INDICATORS*		PROFILE STATES							
		CO	ME	MN	MO	NM	NY	OH	TN
Physician Assistant Training Programs, 2000-2001	Total # of Programs	2	1	1	2	2	19	5	1
Physician Assistant Program Students, 2000-2001	Total Number	93	N/A	N/A	80	44	1,013	175	61
	# Per 100,000 Population ¹	2.2	N/A	N/A	1.4	2.4	5.3	1.5	1.1
Physician Assistant Program Graduates, 2000	Total Number	26	34	N/A	29	9	399	87	32
	# Per 100,000 Population ¹	0.6	2.67	N/A	0.52	0.49	2.1	0.8	0.56

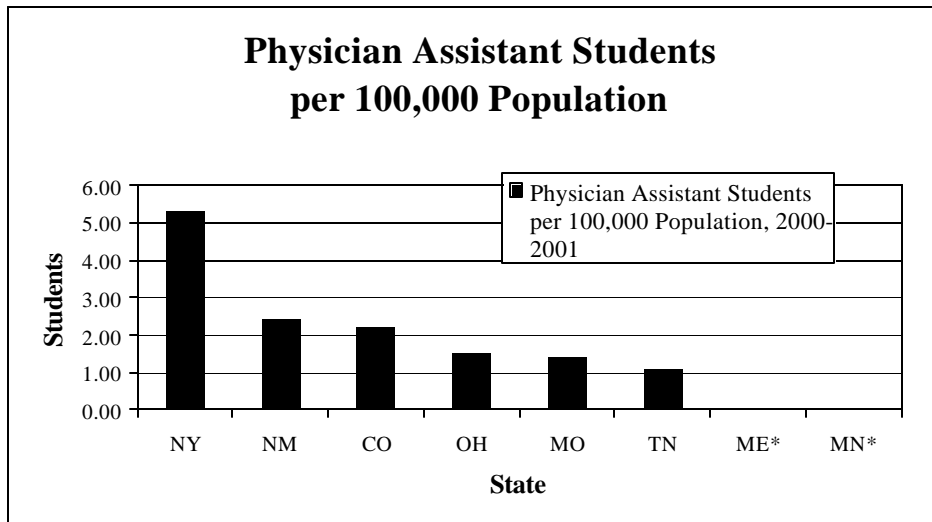
* These data are based only on the schools that responded to a survey by the Association of Physician Assistant Programs.

¹ Denominator number is state population from the 2000 U.S. Census.

N/A = Data was not available

Source: APAP, APAP Annual Report.

Chart 10A.

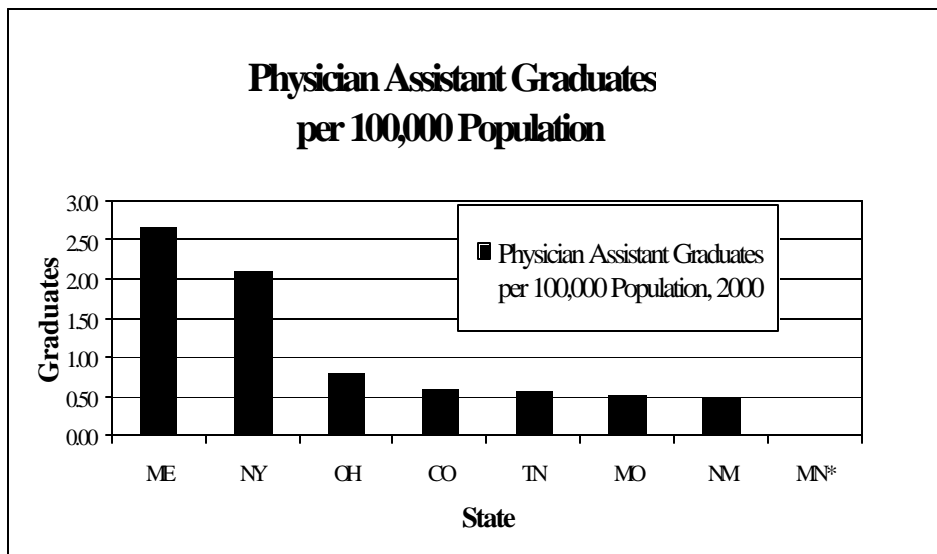


* Data was not available

New York has more than twice as many physician assistant students as do the other profile states.

Chart 10B.

* Data was not available



Maine and New York have the most physician assistant graduates with more than two graduates per 100,000 population. All of the other profile states have less than one physician assistant graduate per 100,000 population.

DENTAL HYGIENIST EDUCATION

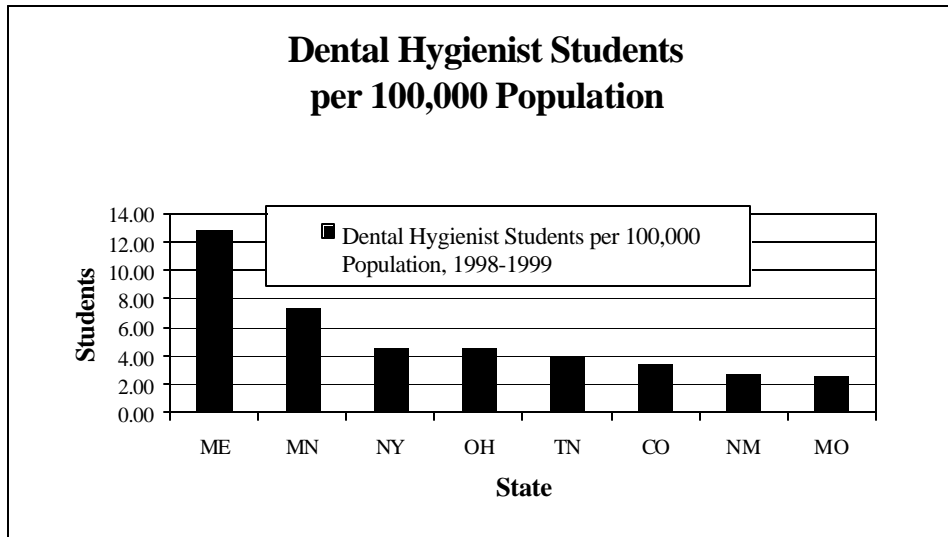
Table 11.

INDICATORS		PROFILE STATES							
		CO	ME	MN	MO	NM	NY	OH	TN
Dental Hygiene Training Programs	Total # of Programs	4	2	9	4	2	10	12	5
	# of <i>Public</i> Programs	4	1	8	4	2	10	12	5
	# of <i>Private</i> Programs	0	1	1	0	0	0	0	0
Dental Hygiene Training Program Students	# of Students, 1997-1998	145	163	364	141	49	867	511	230
	# Per 100,000 Population, 1998-1999*	3.37	12.8	7.4	2.5	2.7	4.6	4.5	4.0
Dental Hygiene Training Program Graduates	# of Graduates, 1998	52	42	164	66	48	346	192	117
	# Per 100,000 Population, 1999*	1.21	3.3	3.3	1.2	2.6	1.8	1.7	2.1

* Denominator number is state population from the 2000 U.S. Census.

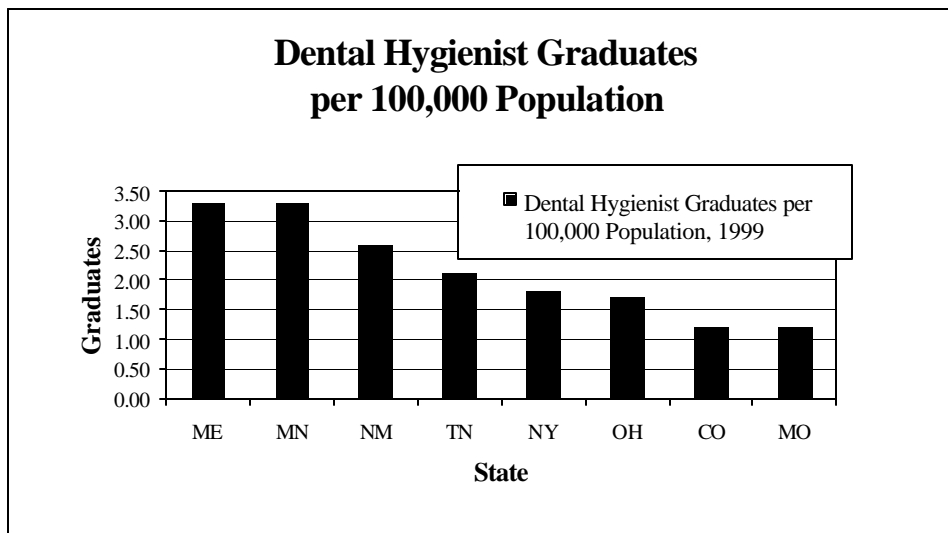
Sources: ADHA, AMA [Health Professions](#).

Chart 11A.



Maine has nearly twice as many dental hygiene students per population as the other profile states. Six of the eight states have fewer than five dental hygiene students per 100,000 population.

Chart 11B.



Maine and Minnesota have the most dental hygienist graduates per 100,000 population. Colorado and Missouri have the least.

SUMMARY AND ANALYSIS

The various indicators of health professions education point to both important similarities as well as significant differences among the profile states.

Medical Education

Although applications to medical school continue to decrease nationwide, the number of enrolled medical students in the profiled states has remained steady or in small decline in recent years.

Most medical schools derive the majority of their income from care to referral patients, federal research funds, and state appropriations. Nationally, state appropriations for medical education have increased steadily since the early 1980s. In 1999-2000, state appropriations amounted to \$3.25 billion. About 95 percent of those appropriations went to public schools that represent about 60 percent of all medical schools. Of the profiled states, New York and Ohio are the leaders in state support for undergraduate medical education. However, despite its relatively small total level of appropriations, New Mexico by far provides the largest amount of state funds per medical student.

While total state appropriations have risen steadily, the percent that these funds represent to the average medical school's revenue base is declining. Nationally, in 1998-1999, state appropriations represented just 8 percent of total medical school revenues compared to nearly 23 percent in the early 1980s. For public medical schools, however, the proportion is twice the overall average—16 percent.

Although patient referrals and federal research funds are based on performance and quite competitive, state appropriations are not generally related to performance outside of meeting basic accreditation rules and regulations. Despite the lack of a required link to performance, medical students in just one of the profiled states—Missouri—are not required by either the state or most of the medical schools to complete a clinical clerkship in family medicine or primary care (mostly in the third year of school).

In earlier studies of what medical school characteristics are related to choice of family medicine as a specialty, the public ownership of the medical school and the number of required weeks of a family medicine clinical clerkship were the only two characteristics found to be significant. This is evident in at least three profile states—Minnesota, Ohio and Colorado. One half to over 60 percent of all in-state medical school graduates of the three states' nearly all public medical schools entered an in-state family medicine residency between 1995 and 2000.

Virtually all innovative undergraduate and graduate training programs based in rural or community-based settings that are viewed as addressing the state's physician workforce needs were started with and still may depend significantly on grant funds or state appropriations. Payments by Medicare and Medicaid for graduate medical education (GME) largely do not address such training missions. However, in this study, half of the profile states—Minnesota, New Mexico, New York and Tennessee—have in place policies as part of their Medicaid program's GME payments that link these payments to addressing state health workforce goals or needs.

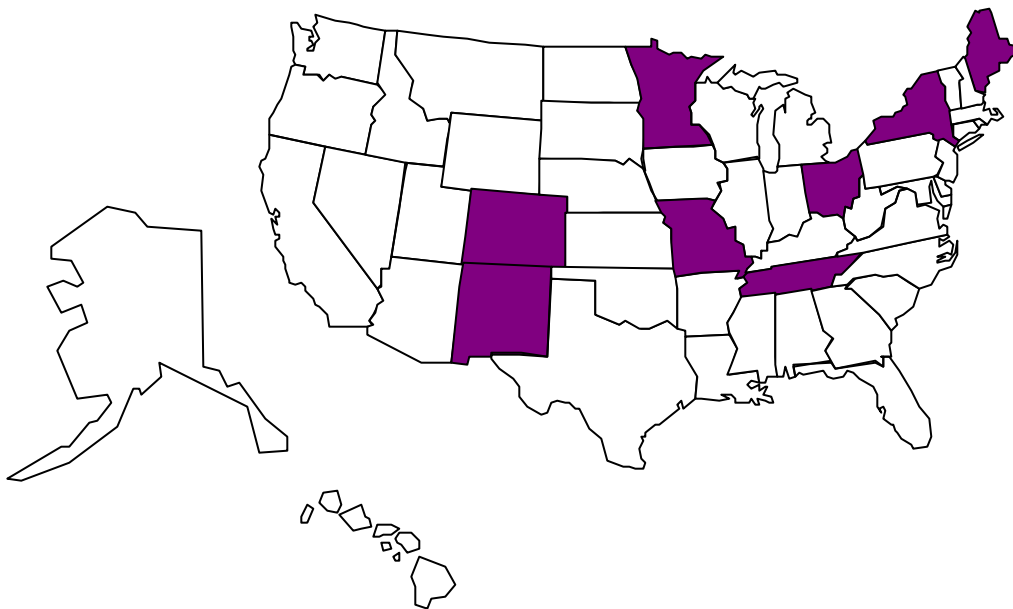
Other Professions Education

As is evident nationwide, nursing school enrollment in most of the profiled states showed significant decline between 1998 and 2000. Baccalaureate nursing school enrollment in one profile state—Maine—actually increased for the period. In fact, Maine’s supply of nursing students per 100,000 population is over four times that of Colorado’s nursing student supply. Most of the nursing schools in these states are public schools.

None of the profile states’ dental schools are producing a sufficient supply of dental graduates, with the exception of New York. There is wide variation of student enrollment as well—New York’s four schools enroll four times the number of students per 100,000 population as Colorado and Tennessee. Two profile states—Maine and New Mexico—have no dental school. These states contract with dental schools in nearby states to enable qualified in-state students to enroll in these programs. State support for dental education in New York, however, on a per student basis is the lowest of the profiled states. State funding per dental student is highest in Colorado and Missouri.

All but one profile state—Maine—have at least one college of pharmacy. As elsewhere, the trend in these states has been to graduate larger numbers of doctoral degree students and fewer baccalaureate students.

Physician Practice Location



The following tables examine in-state physician practice location from two different vantage points: (1) of all physicians who were trained (went to medical school or received their most recent GME training) in the state between 1975 and 1995, and (2) of all physicians who are now practicing in the state, regardless of where they were trained. The data was compiled from the American Medical Association's 1999 Physician Masterfile by Quality Resource Systems, Inc..

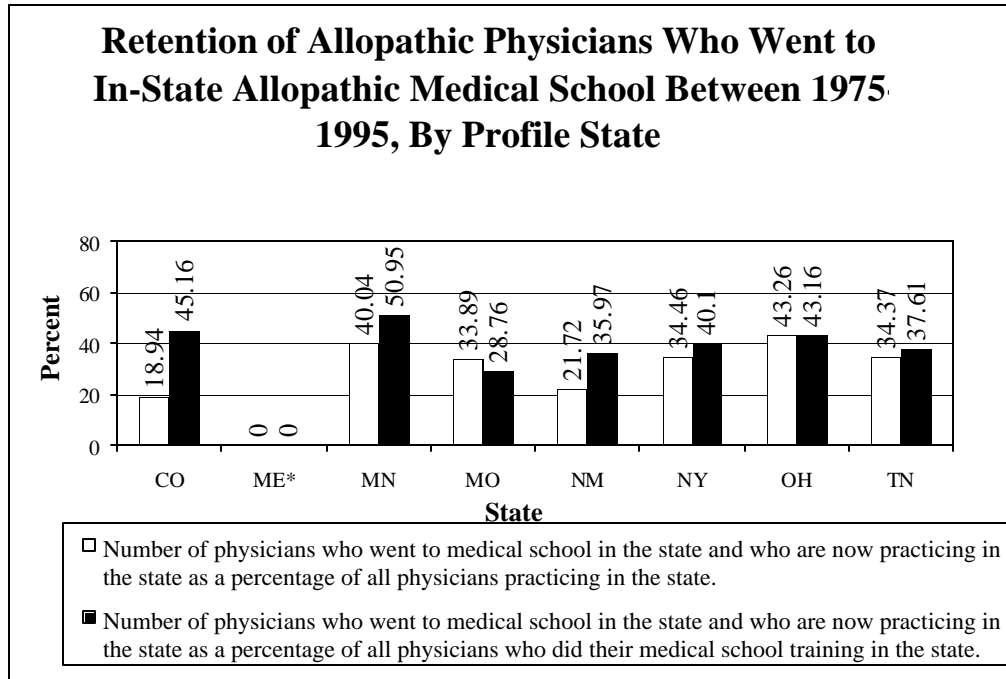
**PRACTICE LOCATION OF PHYSICIANS WHO RECEIVED
THEIR ALLOPATHIC MEDICAL SCHOOL TRAINING
(1975-1995) OR MOST RECENT GME TRAINING (1978-1998)
IN THE STATE**

Table 12.

STATE	CO	ME	MN	MO	NM	NY	OH	TN
Number of physicians who were trained in the state and who are now practicing in the state as a percentage of all physicians practicing in the state .	18.94	0.00	40.04	33.89	21.72	34.46	43.26	34.37
Number of physicians who were trained in the state and who are now practicing in the state as a percentage of all physicians who were trained in the state .	45.16	0.00	50.95	28.76	35.97	40.10	43.16	37.61
Number of physicians who received their most recent GME training in the state and who are now practicing in the state as a percentage of all physicians practicing in the state .	40.78	26.56	60.41	48.40	27.55	76.80	59.64	42.91
Number of physicians who received their most recent GME training in the state and who are now practicing in the state as a percentage of all physicians who received their most recent GME training in the state .	47.41	53.85	46.30	40.78	42.57	52.56	48.21	49.21

NOTE: Maine does not have an allopathic medical school.

Chart 12A.

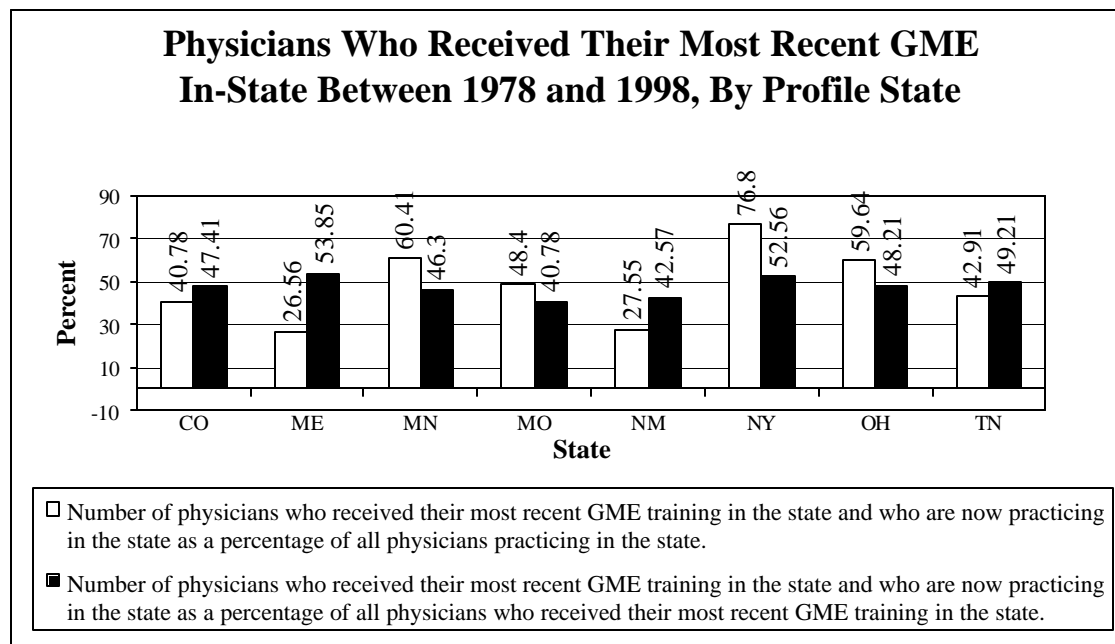


* Maine does not have an allopathic medical school

Ohio and Minnesota have the highest retention rates for those physicians who went to medical school in the state with 43% and 40% respectively. In contrast, only 22% of physicians trained in New Mexico are now practicing in the state.

Over half of the physicians now practicing in Minnesota received their medical training in the state, while only 21% of practicing physicians in New Mexico were trained in the state.

Chart 12B.



Over half of the physicians now practicing in each of just three profile states—New York, Minnesota and Ohio—received their most recent GME training in that state.

Over 50% of all physicians practicing in Maine and New York received their most recent GME training in the state in which they are practicing. In the remaining profile states, less than half of the practicing physicians received their most recent GME training in the state where they are practicing.

SUMMARY AND ANALYSIS

As tabulated from recent physician data masterfiles of the American Medical Association, there is wide variation among the profiled states as to whether location of allopathic medical school training and graduate medical education (GME) is a significant factor in a physician's practice location. New York, a state with 13 medical schools and over 1,100 GME programs fares best of the profile states at retaining its graduates. Of all physicians who are now practicing in New York, over three-quarters (77%) completed their GME in the state. At the low end are Maine and New Mexico. Of all physicians who now practice in Maine, just over 26 percent completed their GME in the state. Of all physicians practicing in New Mexico, just 27 percent completed their GME there. However, of all physicians who completed their GME in Maine, over half (54%) are now practicing in the state—the highest proportion of any profile state. Maine has one osteopathic medical school (and thus had no data for the analysis of medical school and practice location) and just 24 residency programs. New Mexico has one allopathic medical school and 44 GME programs.

Minnesota fares the best or second best in its retention of medical school graduates. Of all physicians practicing in Minnesota, 40 percent received their medical school training in the state. At the low end are Colorado and New Mexico. Of all practicing physicians in Colorado, just 19 percent went to the state's one medical school; only 23 percent of New Mexico's physicians went to that state's one medical school. Of all physicians who received their medical school training in Minnesota, over half (51%) have remained in the state to practice—the highest proportion of any profile state.

A map of the United States with 12 states highlighted in purple. The highlighted states are Minnesota, Missouri, Arkansas, New Mexico, Tennessee, Ohio, Pennsylvania, New York, Vermont, New Hampshire, Maine, and Alaska. All other states are white with black outlines.

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LICENSURE AND REGULATION OF PRACTICE

Table 13.

ADVANCED PRACTICE NURSES (APNs): Recent Expansions in Scope of Practice		
Profile States	Prescriptive Authority	Physician Supervision
CO	Yes, a nurse with prescriptive authority may obtain, possess and administer medications that are within the limits of the nurse's scope of practice.	APNs are required to enter into a "collaborative agreement" with a Colorado licensed physician for the purposes of prescriptive authority.
ME	NPs, CNMs can prescribe schedules III-V in collaboration. Must work with collaborating physician for first two years	Within their scope of practice, APNs can practice independently after 24 months of supervised practice.
MN	All APNs may prescribe drugs and therapeutic devices within the authorized scope of practice. The requirements for prescribing vary slightly for each of the four categories as follows: CNMs: Certification by the American College of Nurse-Midwives Certification Council NPs: Certification by a national nurse certification organization acceptable to the Board; Written agreement with a physician based on board established standards. CRNAs: Certification by the Council on Certification of Nurse Anesthetists; Written agreement with a physician based on board established standards.	All APNs must practice within a health care system that provides for consultation, collaborative management, and referral as indicated by the status of the patient.
MO	APN, CNM, CNP, CNS, CRNA can prescribe non-controlled substances through collaborative agreement.	APNs can independently perform nursing acts. For delegated medical acts, APNs must enter into collaborative practice arrangement.
NM	NP, CNS can prescribe scheduled II-V.	NPs can practice independently and make decisions regarding health care needs of the individual, family or community and carry out health regimens CRNAs must collaborate with the licensed physician, osteopathic physician, dentist or podiatrist concerning the anesthesia care of the patient.
NY	NP, CNM can prescribe schedules II-V with collaborative agreement.	NPs and CNMs must practice under protocol developed with a collaborating physician.
OH	Prescriptive authority just passed for all APNs except CRNAs. Rules are still pending.	A university pilot program to grant prescriptive authority for APNs practicing in underserved areas was in place, but will not be needed based on the new law granting prescriptive authority.
TN	NP, CNM, CRNA can prescribe schedule II-V if they meet qualifications.	All APNs must practice under protocol developed with supervising physician.
<p style="text-align: center;">APN = advanced practice nurse; includes NPs, CNMs, and CRNAs where used. NP = nurse practitioner; CNM= certified nurse midwife; CRNA= certified registered nurse anesthetist</p>		

Sources: State licensing board, AANA, ACNM, Pearson "Annual Legislative Update", HPTS.

Table 14.

PHYSICIAN ASSISTANTS: Recent Expansions in Scope of Practice		
Profile States	Prescriptive Authority	Physician Supervision
CO	Yes. Can prescribe controlled (Schedules II-V) and non-controlled substances using supervising physician's forms. All drugs dispensed must be unit doses prepackaged by pharmacist or physician. PA prescribing controlled substances must be registered with DEA.	PAs must practice with personal and responsible supervision of physician. If the physician regularly practices in the hospital or if hospital is located in a health professional shortage area, PA can practice without physician present but physician must review medical records every 2 working days. In other settings, medical records must be reviewed and signed within 7 working days. Waivers may be granted if the physician assistant is located in an underserved or rural area distant from the physician supervisor. All such waivers shall be in the sole discretion of the Board.
ME	Yes, at the discretion of the Board of Medicine. PA may prescribe and dispense drugs and medical devices, including Schedules III-V controlled substances. Registration with DEA required.	Physician must be available by radio, telephone or telecommunication device. PA and physician establish supervision plan.
MN	Yes. National Commission on Certification of Physician Assistants (NCCPA) -certified PAs may prescribe controlled and non-controlled drugs. Physician must sign and date daily reviews. PAs authorized to prescribe controlled medications must register with DEA.	Constant presence of supervising physician is not required so long as the PA and supervising physician can be in touch via telecommunication.
MO	Yes. Dispensing limited to 72 hours non-controlled substances with supervising physician.	PA must practice in same facility as supervising physician (certain facilities and clinics exempted). Physician must be immediately available for consultation, assistance and intervention.
NM	Yes. Limited prescriptive authority for drugs in board approved formulary.	Physician not required to be physically present at time and place where PA performs services.
NY	Yes. PA may prescribe Schedule III-V and non-controlled medications. PA must register with the Drug Enforcement Agency (DEA).	Physician not required to be physically present at time and place where PA performs services.
OH	None.	Physician not required to be physically present but must be available for consultation.
TN	Yes. PAs may prescribe non-controlled and Schedules II-V medications. PA must register with the DEA.	Active and continuous overview, but physician not required to be physically present at all times.

Source: State licensing board.

Table 15.

DENTAL HYGIENISTS: Recent Expansions in Scope of Practice		
Profile States	Prescriptive Authority	Dentist Supervision
CO	None.	Unsupervised practice in all settings for all licensed dental hygienists for the prophylaxis and several other services. Hygienists may also own a dental hygiene practice.
ME	None.	A hygienist may practice in a public or private school, hospital or other non- traditional practice under "public health supervision status" granted by the dental board on a case-by-case basis. The hygienist may perform the duties they can do under general supervision.
MN	None.	Legislation being considered that authorizes dental hygienists to be employed or retained by a health care facility to perform certain dental hygiene services when in a collaborative agreement with a licensed dentist.
MO	None.	A hygienist is allowed to practice without supervision in public health settings. Hygienists who have been in practice at least three years may provide fluoride treatments, teeth cleanings, and sealants to children who are eligible for medical assistance.
NM	None.	A hygienist may enter a collaborative practice based on a written agreement between the dental hygienist and one or more consulting dentist(s). Collaborative practice agreement must contain protocols for care.
NY	None. Legislation passed to allow hygienists to administer nitrous oxide, but was not signed by governor.	A hygienist must be supervised by a dentist.
OH	None.	Hygienists are permitted to practice without a dentist in a special needs program or clinic under the general supervision rule. A dentist on duty does not need to be physically present. Hygienists are limited to a 15-day period without dentist supervision.
TN	No. Authority to administer nitrous oxide has been granted by the legislature, but no rules have been set by the licensing board.	General supervision. Hygienists can earn an income while the dentist is out of the office within the boundaries of their practice act.

Source: State licensing board, ADHA.

Table 16.

Profile States	PHARMACISTS: Recent Expansions in Scope of Practice
CO	Yes, pharmacists can provide immunizations.
ME	None.
MN	Yes, collaborative practice agreements w/ physicians can give pharmacists limited authority to amend or delete drug therapy.
MO	Yes, pharmacists can provide immunizations.
NM	Yes, have limited prescriptive authority with supervising practitioner and can provide immunizations.
NY	None.
OH	Yes, in consultation agreements with a physician, pharmacists can manage therapy. Also in hospitals and long term-care facilities. Pharmacists can also provide immunizations.
TN	Yes, pharmacists can provide immunizations.

Source: State licensing board.

Table 17.

PHYSICIANS: Public Profiling								
State Mandates Physician Profiles to be Publicly Accessible	CO	ME	MN	MO	NM	NY	OH	TN
	No	No	No	No	No	Yes	Yes	Yes

Source: State licensing board.

SUMMARY AND ANALYSIS

Several changes in the way that both physicians and non-physicians are licensed and regulated by states is having an important impact on health professions supply and practice.

Physician Practice

As part of their traditional responsibility for regulating physicians, state medical boards are required to discipline certain providers where necessary. This task largely has been viewed without controversy until recently when media reports have highlighted growing concerns by the public over the practicing behavior of certain physicians. According to new national consumer guide on physicians released in 2000 by Public Citizen, the majority of physicians who were disciplined by state medical boards for the most serious offenses (e.g., sexual abuse or misconduct, incompetence or negligence, criminal conviction, misprescribing or overprescribing of drugs) were not required to stop practicing medicine, even temporarily.

Such reports continue to place greater pressure on states and the federal government to make more information on individual physicians available to the public. Although Congress continues to debate whether to open up the National Practitioner Data Bank to the public, several states have moved ahead to require the establishment of public statewide physician data profiles. Three of the 8 profiled states—New York, Ohio and Tennessee—have mandated the creation of such profiles, often accessible through the Internet.

Medical and health professions licensing boards in a few profiled states have also agreed voluntarily to assist health workforce researchers on a one-time or periodic basis by allowing them to collect various kinds of workforce data through the profession's licensure renewal process.

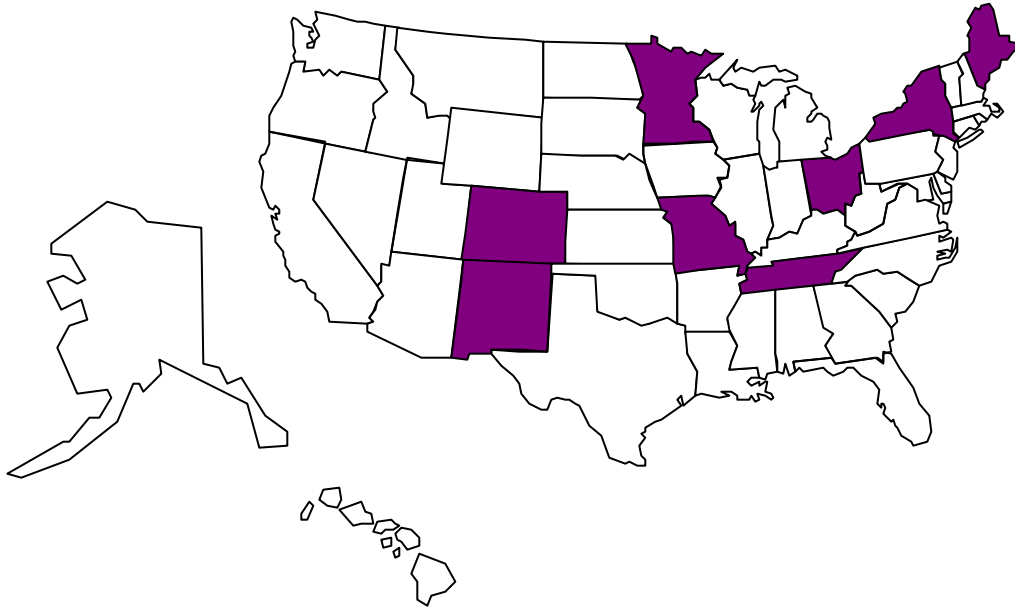
Non-Physician Practice

There continues to be a growing interest by many states to liberalize the scope of practice of certain advanced practice nurses, physician assistants, and in some cases, dental hygienists and pharmacists. Several states have given nurse practitioners increased independence from physician supervision in certain settings or places or for certain procedures. Ohio, a profile state, recently became the last state to grant advanced practice nurses (except nurse anesthetists) prescriptive authority. Recent studies also show that the supply of certified nurse midwives is higher in states with more favorable state regulatory policies as well as higher managed care concentration and a more educated population. There is evidence at least in the profiled states that such conditions may also be at least a factor in the supply of other advanced practice nurses.

There is greater movement in many states to change the scope of practice of dental hygienists to allow the hygienist practicing in public health or other particular settings or locations to practice without the direct supervision of a dentist. Five of the eight profile states have enacted or pending legislation allowing such a change. Colorado allows hygienists to practice independently of a dentist in all settings.

Pharmacists are also receiving greater expansions in their scope of practice, thanks in large part to their expanded doctoral-level training upon graduation. Five of the 8 profile states allow pharmacists to provide immunizations. Pharmacists in Minnesota and Ohio have limited authority in collaboration with physicians to perform drug therapy and counseling.

Improving the Practice Environment



States have the challenge of not only helping to create an adequate supply of health professionals in the state, but also ensuring that those health professionals are distributed evenly throughout the state. Various programs and incentives are used by states to encourage providers to practice in rural and other underserved areas. The tables in this section describe programs in the ten profile states as well as the perceived effectiveness of these programs.

STATE LOAN REPAYMENT, SCHOLARSHIP AND OTHER PROGRAMS

Table 18.

INDICATORS	PROFILE STATES							
	CO	ME	MN	MO	NM	NY	OH	TN
# of Programs*	1	5	6	4	1	1	2	0
# of Annual Participants	50	148	39	140	50	80	9	-
Available Data on Program Impact/ Participant Retention (yes/no)	Yes	No	No	Yes	No	No	Yes	-
<i>Eligible Professions:</i>								
<u>Physicians</u>	X	X	X	X	X	X	X	-
Physician Assistants	X	X	X					-
Nurses	X	X	X	X	X		X	-
Dentists	X	X	X	X	X			-
Dental Hygienists		X	X	X				-
Pharmacists								-

* Includes only state-funded programs which require a service obligation in an underserved area. (NHSC state loan repayment programs are included since the state provides funding.)

Source: State health officials.

All of the profile states except Tennessee have at least one scholarship or loan repayment program. Minnesota and Maine have the most programs with five and six respectively. Three of the eight profile states have available data on program impact and/or participant retention.

STATE RECRUITMENT AND RETENTION INITIATIVES

Table 19.

State Recruitment/Retention Initiatives	Number of Profile States Adopting Initiative	Average Impact Rating (1=high, 5=low)	Professions Affected					
			Physicians	Nurses	Pharmacists	Dentists	Dental Hygienists	Physician Assistants
FOCUSED ADMISSIONS / RECRUITMENT OF STUDENTS FROM RURAL OR UNDERSERVED AREAS	5	3.66	X	X	X	X	X	X
SUPPORT FOR HEALTH PROFESSIONS EDUCATION (stipends, preceptorships) IN UNDERSERVED AREAS	8	2.64	X	X	X	X		X
RECRUITMENT / PLACEMENT PROGRAMS FOR HEALTH PROFESSIONALS	6	2.5	X	X	X	X	X	X
PRACTICE DEVELOPMENT SUBSIDIES (i.e., start-up grants)	2	4	X	X		X		
MALPRACTICE PREMIUM SUBSIDIES	1	N/A	X					
TAX CREDITS FOR RURAL / UNDERSERVED AREA PRACTICE	1	1	X					
PROVIDING SUBSTITUTE PHYSICIANS (<i>locum tenens</i> support)	1	2	X					
MALPRACTICE IMMUNITY FOR PROVIDING VOLUNTARY OR FREE CARE	4	3.25	X					
PAYMENT BONUSES / OTHER INCENTIVES BY MEDICAID OR OTHER INSURANCE CARRIERS	3	3	X	X	X	X	X	X
MEDICAID REIMBURSEMENT OF TELEMEDICINE	2	2	X	X	X	X	X	X

N/A = Data was not available

Source: State health officials.

Tax credits for rural and underserved areas are seen as having the highest impact on workforce supply in underserved areas. Recruitment/retention strategies rated as having the lowest impact by profile states are focused admissions and recruitment of students from rural and underserved areas and malpractice immunity for those providing free or voluntary care. Overall, state recruitment and retention efforts were seen as moderately effective.

SUMMARY AND ANALYSIS

In recent years, states have been putting greater emphasis on creating a more attractive practice environment for health professionals in underserved areas. By examining incentives other than those focusing on educational opportunities and financial support for education and training, most states have developed more organized and coordinated recruitment efforts and better resources and service systems in underserved areas. Financial incentives to practice in underserved areas include bonuses and grants, tax credits and higher reimbursement levels. State officials in this study ranked tax credits for practice in rural and underserved communities as having the greatest impact on recruitment and retention.

Recruiting and retaining a sufficient number of health professionals in rural and underserved communities remains a perennial challenge. Numerous federal, state and local programs, such as the National Health Service Corps (NHSC) and targeted state health service loan repayment initiatives, are intended to spur recruitment of new primary care physicians and other health care providers to rural and inner city areas. While these programs have rapidly placed providers in needy areas, service obligations have not always been effectively enforced, nor are some programs necessarily doing a good job of retaining providers beyond their payback period.

Critics point out that the rise in the supply of generalist physicians in both urban and rural areas has not helped to reduce the overall number of health professional shortage areas and the total positions needed to alleviate these shortage areas. Supporters of the NHSC and similar state initiatives, however, note that as private managed care plans and health networks increasingly entice larger numbers of primary care physicians to join up, it is tougher for isolated rural areas to compete. Thus, they say these government programs are needed now more than ever. (In 2000, NHSC reinstated funding of dental scholarships on a pilot basis.) At the same time, some argue that there needs to be more of an aggressive mindset and effort by needy communities to market themselves and their practices, regardless of the ability of government initiatives to provide assistance.

Although the NHSC is widely regarded as important among efforts to correct the maldistribution of health care providers, it is also recognized as having its limitations. For example, research has documented the relatively poor retention of NHSC physicians in their assigned communities after their service obligations are completed, even when the Corps placed larger and more continuous numbers of health professionals.

In recent years, many states have begun to examine their scholarship and loan programs as well as other practice environment incentives to identify changes that would make these programs more effective. Several states have begun to differentiate priorities (as they collect more data collection on workforce needs and supply) and structure scholarships and loans to be more responsive to these needs. In many states, the selection criteria for scholarships and loans have been expanded and better delineated, just as they have for school admissions. In addition, there is increasing emphasis on developing community sponsorship in underserved areas for individual scholarship and loan candidates, as well as for overall financial support for efforts to attract health professionals to their areas. Modifications have been made to funding levels and payback conditions. Stronger penalty provisions for non-compliance have been instituted in a growing number of states, but more emphasis has generally been placed on enhancing incentives for practice in underserved areas rather than on development of penalties.

In general, several states have been willing to re-examine programs and make significant improvements. While much of the change is incremental, many of the improvements are far reaching. Three of the profiled states—Colorado, Missouri and Ohio—have collected significant data on the number of individuals recently participating in new and expanded scholarship and loan programs and have reported on retention in underserved areas. Such programs in Maine and Missouri are sizable. Recently, Minnesota issued an evaluation of its service-contingent scholarship and loan repayment programs. Importantly, several of these states have considered and approved expansion of these programs to include dentists and dental hygienists—two professions that are increasingly in short supply in underserved areas. Other states, such as Tennessee, once had an array of scholarship and loan repayment programs, but in recent years have seen them terminated for various financial and program performance reasons.

While state scholarship and loan repayment programs in particular have shown some evidence of short and long term success, due in part to recent improvements, further legislative and regulatory modifications are needed. Possible needed changes include:

- Strengthening the linkage between increased financial awards and enhanced placement in underserved areas;
- Ensuring that penalties for noncompliance are an effective deterrent;
- Broadening the definition of required service location;
- Devoting more attention to targeting the selection of participants;
- Placing greater importance on retention and emphasize the collection and monitoring of performance data; and
- Streamlining differences in site designation, participant selection and placement criteria between federal and state loan repayment and scholarship programs.

In general, states need to increase significantly their evaluation of all practice incentive programs resulting in the expansion of the most successful initiatives and termination of the others. Legislation (comprehensive or otherwise) enacted to spur health professionals to locate in underserved communities has not always translated into action or results. Budgetary crises and other financial barriers have delayed or downsized appropriations for more costly programs. Most well-designed practice incentive programs remain small (e.g., loan repayment/scholarship initiatives typically can only accommodate a few participants) and ultimately have little impact on addressing the aggregate problem. More recently, a few states, however, have decided to use funds from their recent tobacco settlement to address health workforce shortages. Mississippi, for example, is supporting the creation of up to 20 new physician resident scholarships.

The effectiveness of many recently passed initiatives is often unknown because insufficient time has passed between placement and retention in practice, and often there is limited centralized data available in states on underserved area practice costs and payer mixes, underserved community needs and issues, participant practice concerns, retention rates in underserved areas and other matters. Also, many laws obtain no appropriation to evaluate nor contain measures to enforce a new program's effectiveness, thus providing the state little or no evidence of its success. In summary, few sound evaluations have been performed of these various state strategies, particularly those initiatives common to many states.

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